ICOM

SERVICE MANUAL

COMMUNICATIONS RECEIVER

IC-R75

Icom Inc.

INTRODUCTION

This service manual describes the latest service information for the IC-R75 at the time of publication.

VERSION	SYMBOL
U.S.A.	USA
Europe	EUR
U.K.	UK
S.E.Asia	SEA
Other	OTH

To upgrade quality, all electrical or mechanical parts and internal circuits are subject to change without notice or obligation.

DANGER

NEVER connect the receiver to an AC outlet or to a DC power supply that uses more than 16 V. Such a connection could cause a fire hazard and/or electric.

DO NOT expose the receiver to rain, snow or any liquids.

DO NOT reverse the polarities of the power supply when connecting the receiver.

DO NOT apply an RF signal of more than 20 dBm (100mW) to the antenna connector. This could damage the receiver's front end.



ORDERING PARTS

Be sure to include the following four points when ordering replacement parts:

1. 10-digit order numbers
2. Component part number and name
3. Equipment model name and unit name
4. Quantity required

<**SAMPLE ORDER**>

0910051123 PCB	B-5274C	IC-R75	PLL UNIT	1 pieces
8810005770 Screw	Bih M3x8 ZK	IC-R75	Chassis	10 pieces

Addresses are provided on the inside back cover for your convenience.

REPAIR NOTES

1. Make sure a problem is internal before disassembling the receiver.
2. **DO NOT** open the receiver until the receiver is disconnected from its power source.
3. **DO NOT** force any of the variable components. Turn them slowly and smoothly.
4. **DO NOT** short any circuits or electronic parts. An insulated turning tool **MUST** be used for all adjustments.
5. **DO NOT** keep power ON for a long time when the receiver is defective.
6. **READ** the instructions of test equipment thoroughly before connecting equipment to the receiver.

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SECTION 1 SPECIFICATIONS

■ GENERAL

• Frequency range :

Version	Frequency coverage
USA, EUR, UK, OTH	30 kHz – 60 MHz*[1]
SEA	30 kHz – 30 MHz*[2]

*[1] Specifications guaranteed for 0.1 – 29.99 MHz and 50 – 54 MHz
*[2] Specifications guaranteed for 0.1 – 29.99 MHz

• Mode : SSB (LSB, USB), AM, FM, CW, RTTY, S-AM

• Receive system : Triple-conversion superheterodyne

• Intermediate frequencies :

	SSB	CW	RTTY	AM, S-AM	FM
1st (MHz)	69.0115	69.0106	69.0105	69.0100	69.0115
2nd (MHz)	9.0115	9.0106	9.0105	9.0100	9.0115
3rd (MHz)	0.4550	0.4559	0.4560	0.4500	0.4500

May differ according to selected IF filter.

• Sensitivity : 0.1 MHz – 1.799 MHz (Preamplifiers are OFF)
SSB, CW, RTTY less than 2.0 µV for 10 dB S/N
AM, S-AM less than 13.0 µV for 10 dB S/N

1.8 MHz – 27.99 MHz (The preamplifier 1 is ON)
SSB, CW, RTTY less than 0.16 µV for 10 dB S/N (typical)
AM, S-AM less than 2.0 µV for 10 dB S/N

28 MHz – 29.99 MHz (The preamplifier 1 is ON)
SSB, CW, RTTY less than 0.16 µV for 10 dB S/N (typical)
AM, S-AM less than 2.0 µV for 10 dB S/N
FM less than 0.5 µV for 12 dB SINAD

50 MHz – 54 MHz (The preamplifier 2 is ON)
SSB, CW, RTTY less than 0.13 µV for 10 dB S/N (typical)
AM, S-AM less than 1.0 µV for 10 dB S/N
FM less than 0.25 µV for 12 dB SINAD

• selectivity : SSB, CW, RTTY More than 2.1 kHz/–6 dB
Less than 4.0 kHz/–60 dB

AM, S-AM More than 6.0 kHz/–6 dB
less than 20.0 kHz/–50 dB

FM More than 12.0 kHz/–6 dB
less than 30.0 kHz/–40 dB

• Audio output power : More than 2.0 W at 10 % distortion with an 8 Ω load

• Antenna impedance : 50 Ω or 450 Ω

• Squelch sensitivity (threshold) :

Frequency (MHz)	SSB	FM
0.1 – 1.799	less than 71 µV*	–
1.8 – 27.99	less than 5.6 µV*[1]	–
28 – 29.99	–	less than 0.32 µV*[1]
50 – 54	less than 5.6 µV*[2]	less than 0.32 µV*[2]

*Preamplifiers are OFF; *[1]Preamplifier 1 is ON; *[2]Preamplifier 2 is ON

• Current drain (13.8 V DC) : Less than 1.3 A (Standby), Less than 1.5 A (Max. audio out)

• Spurious and image rejection : More than 70 dB (0.1 – 1.799 MHz SSB, AM, S-AM are more than 60 dB)

• Dimensions : 241(W)×94(H)×229(D) mm; 9½(W)×3¹¹⁄₁₆(H)×9¹⁄₃₂(D) inch (projection not included)

• Weight (approximate) : 3.0 kg; 6 lb 10 oz (AC adaptor “AD–55/A/V” is not included)

• Antenna connector : SO-239 (50 Ω), push connection terminal (450 Ω)

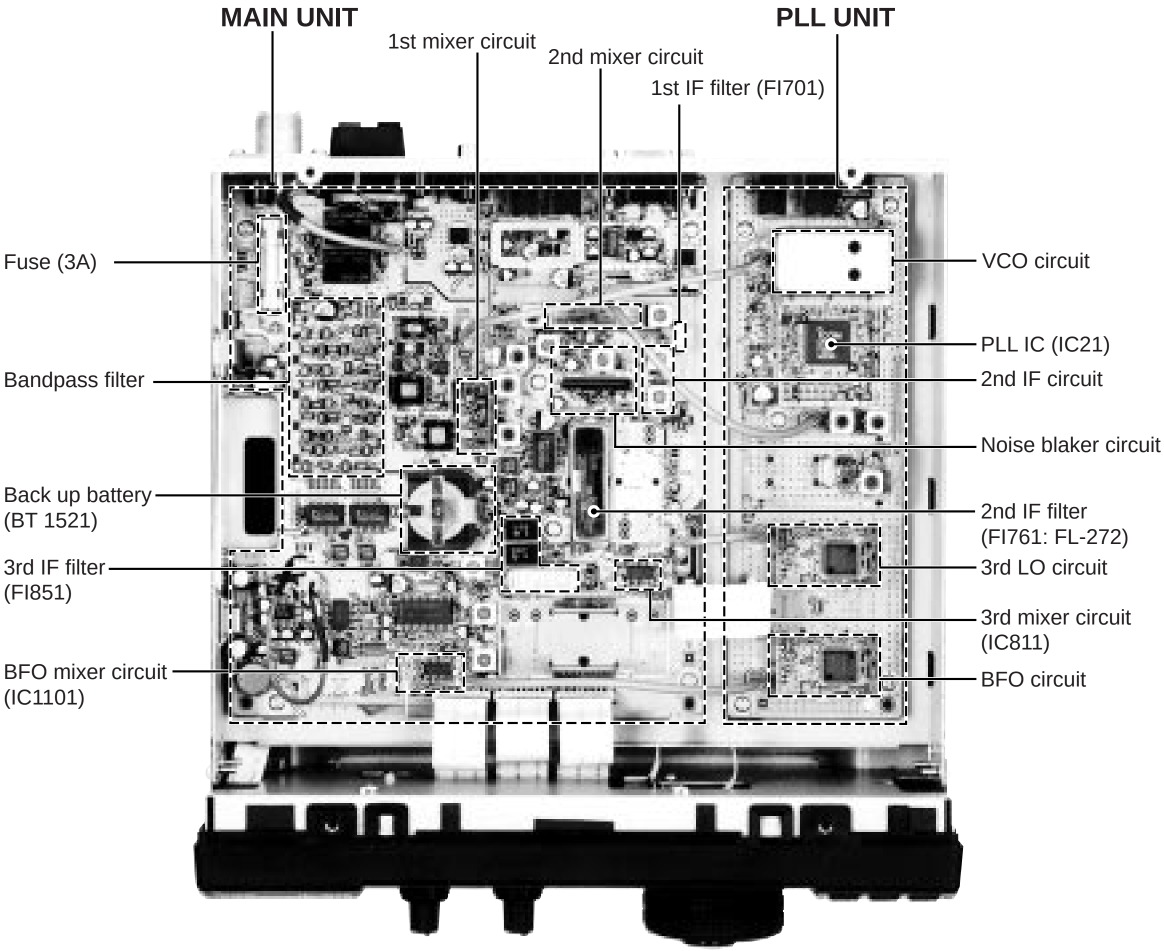
• CI-V connector : 2-connector 3.5 (d) mm (⅛")/8 Ω

• PHONES connector : 3-conductor 6.35 (d) mm (⅛")

• External speaker connector : 2-conductor 3.5 (d) mm (⅛")/8 Ω

All stated specifications are subject to change without notice or obligation.

SECTION 2 INSIDE VIEWS



SECTION 3 CIRCUIT DESCRIPTION

3-1 RECEIVER CIRCUITS

3-1-1 RF SWITCHING CIRCUIT (MAIN UNIT)

The IC-R75 has two antenna connectors. RF signals enter either the [50 Ω ANT.] or [450 Ω ANT.] connector.

RF signals from the [50 Ω ANT.] connector are applied to the antenna switching circuit (RL121), and then pass through the low-pass filter (L131, L132, C131–C136).

RF signals from the [450 Ω ANT.] connector are passed through the L101 to exchange the impeadance value, and are then applied to the antenna switching circuit (RL121). The signals are applied to the low-pass filter (L131, L132, C131–C136).

Each RF signals from the [50 Ω ANT.] connector or [450 Ω ANT.] connector are chosen by the antenna switching circuit (RL121).

3-1-2 RF FILTER CIRCUIT (MAIN UNIT)

The filtered signals are applied to the RX attenuator switching circuit (RL141). Either the signals bypass or pass through the attenuator circuit. The signals are attenuated at 20 dB when passing through the attenuators. The attenuator system excludes non-linear components between an antenna connector and an attenuator to prevent strong signals from causing distortion. The signals are then applied to the RF filters. The MAIN UNIT has 8 RF bandpass fileters for signals above 2.0 MHz and 2 low-pass filters for signals below 2.0 MHz.

(1) Below 1.6 MHz

The signals are applied to the low-pass filter consisting of C170–C175, L171–L173 via the limitter circuit (D141, D142). A diode is removed at the entrance of the low-pass filter. This device prevents the diode from causing distortion when receiving very strong signals. A switching diode (D172) is turned on when the "B0" line is "HIGH".

(2) Above 1.6 MHz

The signals are applied to the high-pass filter consisting of C161–C163, L161–L164. This filter suppresses strong signals below 1.6 MHz such as broadcasting stations.

The filtered signal between 1.6 MHz and 2.0 MHz are applied to the low-pass filter (C182–C187, L182, L183) via the switching diode (D181). The switching diodes (D181, D182) are turned ON when the "B1" line is "HIGH".

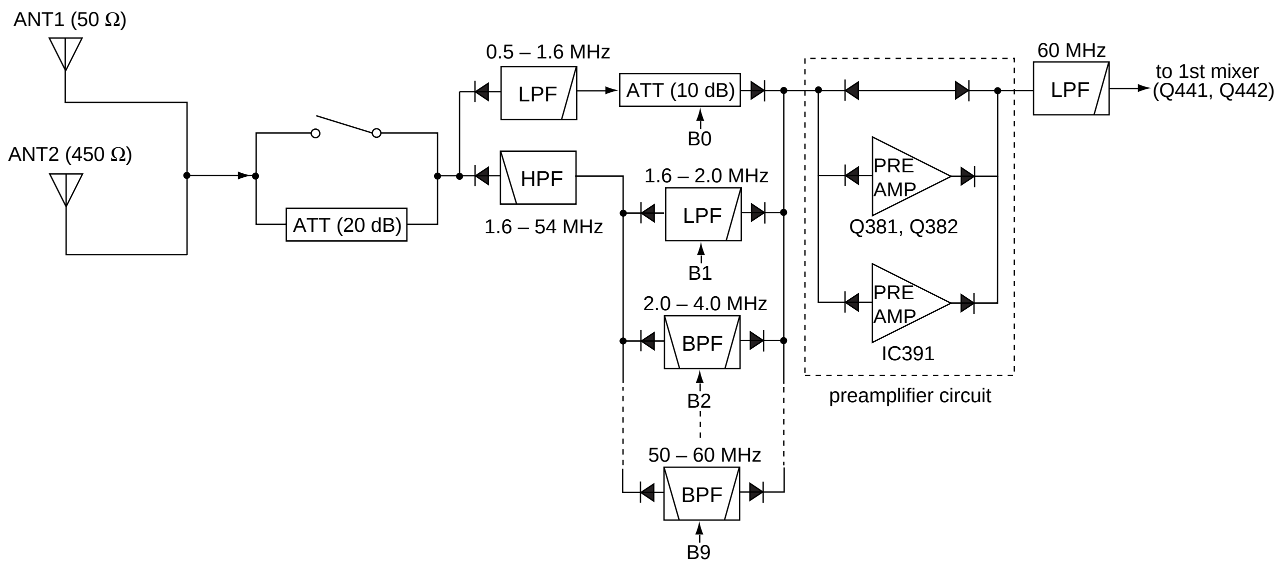
The filtered signals above 2.0 MHz are applied to one of 8 bandpass filters depending on the receive frequencies.

After passing through a bandpass or low-pass filter, the signals are applied to the pre-amplifier circuit (Q381, Q382, IC391).

(3) FILTER SWITCHING CIRCUIT

The RF bandpass filter corresponds to the BPF switching voltage (B0–B9) based on the CPU via the shifit registor (IC551, IC552) and driver (IC561, IC562). The switching voltage of the BPF exit ot improve multi-signal and strong signal characteristics.

• RF bandpass and preamplifier circuit



3-1-3 PRE-AMPLIFIER CIRCUIT (MAIN UNIT)

The pre-amplifier circuit uses low noise junction FETs (Q381, Q382) or wideband amplifier (IC391) to provide gain over a wide frequency range.

When the [P.AMP] switch is turned "PREAMP 1", the signals from the RF filter are amplified by the junction FETs pre-amplifier circuit (Q381, Q382).

When the [P.AMP] switch is turned "PREAMP 2", the signals from the RF filter are amplified by the wideband pre-amplifier circuit (IC391).

When the [P.AMP] switch is turned "PREAMP OFF", the signals from the RF filter bypass the pre-amplifiers through D371 and D372.

The amplified or bypassed signals are applied to the 1st mixer circuit (Q441, Q442) via the low-pass filter (L431, L432 and C431–CC436). The low-pass filter attenuates at 50 MHz to suppress image frequency.

3-1-4 1ST MIXER AND IF CIRCUITS (MAIN UNIT)

The filtered signals are mixed with a 69.0415–129.0115 MHz 1st LO signal to produce a 69.01 MHz 1st IF signal at the 1st mixer circuit (Q441, Q442).

1ST IF FREQUENCY

MODE	FREQUENCY
LSB, USB, FM	69.0115 MHz
CW	69.0106 MHz
RTTY	69.0105 MHz
AM, S-AM	69.0100 MHz

The 1st mixer circuit employs a balanced mixer using low-noise junction FETs (Q441, Q442) to expand the dynamic range.

The 69.0415–129.0115 MHz 1st LO signal is applied to an LO amplifier (Q411) from the PLL unit via J411, and then passes through the low-pass filter (L421, L422, C422–C425). The filtered signal is applied to the 1st mixer circuit.

The 1st IF signal is applied to the crystal bandpass filter(FI-461) to suppress out-of-band signals. The filtered signal is amplified at a 1st IF amplifier (Q471), and then applied to a 2nd mixer circuit (D491)

3-1-5 2ND MIXER AND IF CIRCUITS (MAIN UNIT)

The 1st IF signal is mixed with a 60.0 MHz 2nd LO signal to produce 9 MHz 2nd IF signal at the 2nd mixer (D491, C492, L491, L492). The 60.0 MHz 2nd LO signal is applied to the 2nd mixer from the PLL unit via J491.

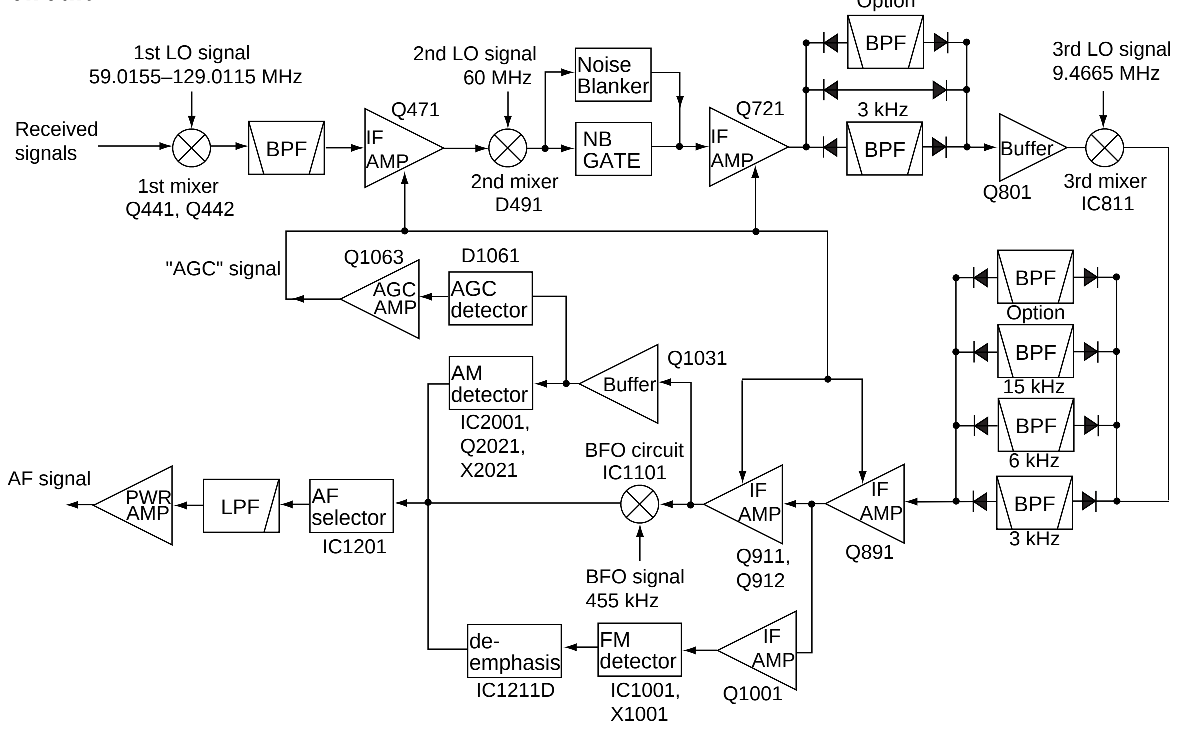
2ND IF FREQUENCY

MODE	FREQUENCY
LSB, USB, FM	9.0115 MHz
CW	9.0106 MHz
RTTY	9.0105 MHz
AM, S-AM	9.0100 MHz

The 9 MHz 2nd IF signal is applied to the crystal bandpass filter (FI701) to suppress unwanted signals.

The filtered signal enters the noise blanker gate (D711–D714). The signal is applied to L712 to obtain clear reception and is then amplified at the 2nd IF amplifier (Q721). The signal passes through a loose resonator circuit (C726, L721) and then is applied to one of the two crystal bandpass filters.

• IF circuit



When the [FIL] switch is turned “2F3K”, the filter is selected FI761 which covering the 2.4 kHz bandwith.

When the [FIL] switch is turned “2FOP”, the filter is selected an optional filter.

When the [FIL] switch is turned “2FTH”, the signal from the 2nd IF amplifier bypass the crystal bandpass filters through D771 and D773.

The filtered or bypassed signal is amplified at the buffer amplifier (Q801) and applied to the 3rd mixer circuit (IC811).

3-1-6 NOISE BLANKER CIRCUITS (MAIN UNIT)

The IC-R75 uses a trigger noise blanker circuit which removes pulse-type noise signals at the noise blanker gate (D711–D714).

The 2nd IF signal passes through the crystal bandpass filter (FI701) to suppress unwanted signals. A portion of the output signal is applied to a noise amplifier circuit (IC731, Q731, Q733) and detected at a noise detector circuit (D731). The detected voltage is applied to a noise blanker gate control circuit (Q735–Q737, D732).

The threshold level of the noise blanker gate control circuit (Q735–Q737, D732) is set at 1.0 V on SSB mode (In case of AM mode, is set at 1.6 V). When the detected voltage exceeds the threshold level, Q737 outputs a blanking signal to activate the noise blanker gate (D711–D714).

A portion of the detected voltage is applied to the noise blanker AGC circuit (Q732, Q734). The noise components are fed back to the noise amplifier (IC731). The time constant of the noise blanker AGC circuit is determined by R737, R744 and C739. This AGC circuit does not operate to detect pulse-type noise.

When the operating frequency or mode is changed, the “UNLC” signal is applied to the noise blanker gate control circuit (D732). The noise blanker gate prevents PLL click noise.

3-1-7 3RD MIXER AND IF CIRCUITS (MAIN UNIT)

The 2nd IF signal is mixed with a 9.4665 MHz 3rd LO signal to produce a 450–456 kHz 3rd IF signal at the 3rd mixer (IC811).

3RD IF FREQUENCY

MODE	FREQUENCY
LSB, USB	455.0 kHz
CW	455.9 kHz
RTTY	456.0 kHz
AM, S-AM	450.0 kHz

The 9.4665 MHz 3rd LO signal is applied to the 3rd mixer IC (IC811, pin 10) from the PLL unit via J811. The 450–456 kHz 3rd IF signal is applied either to one of the 3 ceramic bandpass filters (FI851, FI861, FI871) or to an optional crystal bandpass filter to suppress unwanted signals.

When the [FIL] switch is turned “3F3K”, the filter is selected FI851 which covering the 2.4 kHz bandwith.

When the [FIL] switch is turned “3F6K”, the filter is selected FI861 which covering the 6 kHz bandwith.

When the [FIL] switch is turned “3F15”, the filter is selected FI871 which covering the 15 kHz bandwith.

When the [FIL] switch is turned “3FOP”, the filter is selected an optional crystal bandpass filter.

When the mode is selected SSB mode, the filtered 3rd IF signal is amplified at the 3rd IF amplifier (Q891), and is then applied to the 3rd IF amplifier (Q911) via the receiver total gain control circuit (R898). The amplified signal is applied to the SSB demodulator circuit.

When the mode is selected FM mode, the filtered 3rd IF signal is amplified at the 3rd IF amplifier (Q891), and is then applied to the FM demodulator circuit.

When the mode is selected AM mode, the filtered 3rd IF signal is amplified at the 3rd IF amplifier (Q891), and is then applied to the 3rd IF amplifier (Q911) via the receiver total gain control circuit (R898). The amplified signal is applied to the AM demodulator circuit.

1st, 2nd and 3rd IF amplifiers (Q471, Q721, Q891) are controlled by AGC bias voltage.

3-1-8 BFO CIRCUIT (PLL UNIT)

The BFO (Beat Frequency Oscillator) circuit consists of Q1, X1, Q201 and IC 201 on PLL unit. The oscillator provides a beat frequency signal to the SSB demodulator circuit (MAIN UNIT; IC1101) for demodulating the 3rd IF signal into an AF signal.
The 30 MHz signal is oscillated at Q1 and X1 for the system clock signal of the DDS IC (IC201). The oscillated signal is amplified at Q201 and is applied to the DDC IC (IC201, pin 7) to produce the 455 kHz BFO signal.
The 455 kHz signal passes through the low-pass filter (L201, L202, C202–C207) via the D/A converter, and is then mixed with the 3rd IF signal at the SSB demodulator circuit (MAIN unit; IC1101).

3-1-9 DEMODULATOR CIRCUIT (MAIN UNIT)

The demodulator circuit consists of 3 detector circuits.

(1) SSB DEMODULATOR CIRCUIT

A product detector (IC1101) demodulates SSB, RTTY and CW signals into an AF signal. The 3rd IF signal from the IF amplifier (Q911) is mixed with the BFO signal at the product detector (IC1101) to be demodulated into an AF signal. The AF signal passes through the AF input mode selector switch (IC1201).

(2) FM DEMODULATOR CIRCUIT

A FM detector (IC1001, X1001) demodulates the FM signal into an AF signal. The 3rd IF signal from the IF amplifier (Q891) is amplified at the 3rd IF amplifier (Q1001), and is then applied to the FM detector (IC1001, X1001) to demodulate the 3rd IF signal. The demodulated signal is applied to the de-emphasis circuit (IC1211D) to produce the FM AF signal. The AF signal passes through the AF input mode selector switch (IC1201).

The FM detector outputs “FMNL” signal from IC1001, pin 14 is applied to the CPU (LOGIC unit; IC101, pin 94) to control the noise squelch level.

(3) AM DEMODULATOR CIRCUIT

The AM demodulater circuit (IC2001) has the envelope detect function and the synchronous detect function.
An AM detector (IC2001) demodulates the AM signal into an AF signal. The 3rd IF signal from the IF amplifier (Q911) is amplified at the buffer amplifier (Q1031), and is then applied to the AM demodulater circuit (IC2001)to demodulate the 3rd IF signal into the AM AF signal. The AF signal which is the AM envelope detect the AF signal or the AM synchronous detect AF signal passes through the AF input mode selector switch (IC1201).

3-1-10 AF INPUT MODE SELECTOR SWITCH (MAIN AND LOGIC UNITS)

The AF input mode selector switch (MAIN unit; IC1201) consists of 4 analog switches. The switches are selected mode signals of “AFS1” and “AFS2” from the CPU (LOGIC unit; IC101) via the shift registor (MAIN unit; IC1601), and are selected by the squelch control signal from the CPU (LOGIC unit; IC101). The AF signal is output from IC1201 (MAIN unit; pin 13).

3-1-11 AF AMPLIFIER CIRCUIT (MAIN AND FRONT UNITS)

The AF signal output is passed though the low-pass filter (IC1211) to suppress unwanted signals. The filtered signal is mixed with “BEEP” signal at the AF level variable circuit (MAIN unit; IC1251), and is then applied to the AF amplifier circuit and the AF level variable circuit (IC1251).
The AF level variable circuit controls the AF level by the “AF GAIN” (R141) on the VR BOARD. The AF signal is applied to the AF mute circuit to suppress the noise when “AF GAIN” (R141) level is minimum, and is then power-amplified at IC1291 on the MAIN unit to drive the speaker.

The one of the AF amplified signal is output “AAFO” signal to record the AF signal to the AF recording jack (PLL unit; J3).

3-1-12 AGC AND S-METER CIRCUITS (MAIN UNIT)

The AGC (Automatic Gain Control) circuit reduces signal fading and keep the audio output level constant. The receiver gain is determined by voltage on the AGC line (Q1063, collector). When strong signals are received, the AGC circuit decreases the voltage on this line.

The 3rd IF signal is amplified at the IF amplifier (Q911). A portion of the 3rd IF signal is applied to the buffer amplifier (Q1031) to convert the impedance. The amplified IF signal is detected at the AGC detector (D1061) via the C1061, and enters the base of the AGC amplifier (Q1063) to control the voltage on the AGC line.

The AGC mode is selected by the receiver mode or AGC swtich on the front panel using the delay control circuit (Q1064–Q1066). The MDAT signal from the CPU (LOGIC board; IC101, pin 21) is applied to the shift resistor (IC1601, pin 2) to produce the AGSS and the AGFS signals. The AGSS signal is applied to the Q1064, the AGFS signal is applied to the Q1065, the AGRS signal from the CPU (LOGIC unit; IC101, pin 80) is applied to the Q1066 to control the delay control circuit.
The AGRS signal resets the AGC circuit when IC-R75 is working the memory scaning.

When the AGC switch is selected “OFF”, the Q1061 do not supply the voltage to the AGC amplifier (Q1063) via the “AGOS” line, determining the time constant to deactivate the AGC circuit.

A portion of the AGC bias voltage is amplified at the S-Meter amplifier circuit (IC1211C, D831), and then applied to the CPU (LOGIC unit; IC101, pin 95) via the “SML” line. Thus, the CPU controls S-Meter display.

3-1-13 SQUELCH CIRCUIT (MAIN AND LOGIC UNIT)

The “SML” signal is applied to the CPU (LOGIC unit; IC101, pin 91) from the meter amplifier circuit (IC1211C, D831). The CPU compares “SML” signal with the level of SQL volume on the VR BOARD to control the “SQL” signal.
The CPU is output the “SQLS” signal from pin 81, and then applied to the AF selector circuit (MAIN unit; IC1201, pin 6) which has also the squelch gate circuit.

3-2 PLL CIRCUITS

3-2-1 GENERAL DESCRIPTION

The PLL unit generates a 1st LO signal (69.0415–129.0115 MHz variable), 2nd LO signal (60 MHz), 3rd LO signal (9.4665 MHz) and BFO signal (455 kHz) used in the MAIN unit.
The IC-R75 uses a DDS (Direct Digital synthesizer) system. The DDS system provides rapid lockup time and high quality frequency oscillation.

3-2-2 REFERENCE OSCILLATOR CIRCUIT (PLL CIRCUIT)

The 30 MHz reference oscillator circuit consists of X1 and Q1. The 30 MHz reference frequency is oscillated to produce all of the LO signals.

3-2-3 1ST LO CIRCUIT (PLL AND MAIN UNIT)

The 30 MHz reference frequency is applied to the DDS-IC (PLL unit; IC21, pin 40) to oscillate the 1st LO signal. The reference frequency is compared to the DDS output signal (PLL unit; IC21, pin 46) to oscillate the PLL lock voltage. The PLL lock voltage controlls the oscillate frequency of the VCO1 and VCO2 circuit.

The oscillated signal at the VCO1 and VCO2 circuit is amplified at the LO-amplifier (PLL unit; Q91), and passes through the low-pass filter (PLL unit; Q92, D91, D92, L91, L93, C96–C100, C102, C103) to suppers high harmonic components. The low-pass filter controlls the cut-off frequency of less than 29.999 MHz and more than 30.000 MHz by switching C102 and C103 “ON” and “OFF” respectively.

The filtered signal is applied to the LO-amplifier (MAIN unit; Q411), and is then applied to the 1st mixer circuit (MAIN unit; Q441, Q442) via the low-pass filter (MAIN unit; L421, L422, C422–C425).

The reference frequency from the LO-amplifier (PLL unit; Q91) is also divided by 4 at IC22, and is amplified at the IC23. The signal is applied to the DDS-IC (PLL unit; IC21, pin 88) for the clock signal.

3-2-4 2ND LO CIRCUIT (PLL AND MAIN UNIT)

The 30 MHz reference frequency from the Q1 and X1 on the PLL unit is multiplied by 2 at Q2 on the PLL unit. The 60 MHz 2nd LO signal is obtained at the L4 and L5 on the MAIN unit, and is then applied to the 2nd mixer circuit (MAIN unit; D491) via the 3dB attenuator (MAIN UNIT; R491–R493).

3-2-5 3RD LO CIRCUIT (PLL AND MAIN UNIT)

The 30 MHz reference frequency is oscillated at the Q1 and X1 on the PLL unit, and is then amplified at the Q151 on the PLL unit. The amplified signal is applied to the 10 bits DDS-IC (PLL unit; IC151, pin 7) for the clock signal to produce the 9.4665 MHz 3rd LO signal. The 3rd LO signal is applied to the D/A converter circuit, and passes through the low-pass filter (PLL unit; L151, L152, C152–C157) to suppress spurious components. The filtered 9.4665 MHz 3rd LO signal is applied to the 3rd mixer circuit (MAIN unit; IC811, pin 10)

3-2-6 BFO CIRCUIT (PLL AND MAIN UNIT)

The 30 MHz reference frequency is amplified at the Q201 on the PLL unit, and is applied to the 10 bits DDS-IC (PLL unit; IC201, pin 7) for the clock signal to produce the 455 kHz BFO signal. The BFO signal is applied to the D/A converter circuit, and passes through the low-pass filter (PLL unit, L201, L202, C202–C207) to suppress spurious components. The filtered 455 kHz BFO signal is applied to the BFO mixer circuit (MAIN unit; IC1101, pin 10).

3-2-7 VCO CIRCUIT

The VCO circuit consists of the VCO1 circuit (PLL unit; Q71, Q72, D71) and VCO2 circuit (PLL unit; Q81, Q82, D81).
The VCO1 controls less than displayed frequency of 29.999 MHz to use the PLL lock voltage from the DDS-IC.
The VCO2 controls more than displayed frequency of 30.000 MHz to use the PLL lock voltage from the DDS-IC.

3-3 LOGIC CIRCUITS

The LOGIC circuit consists of the CPU, the reset circuit, backup battery circuit, and so on.

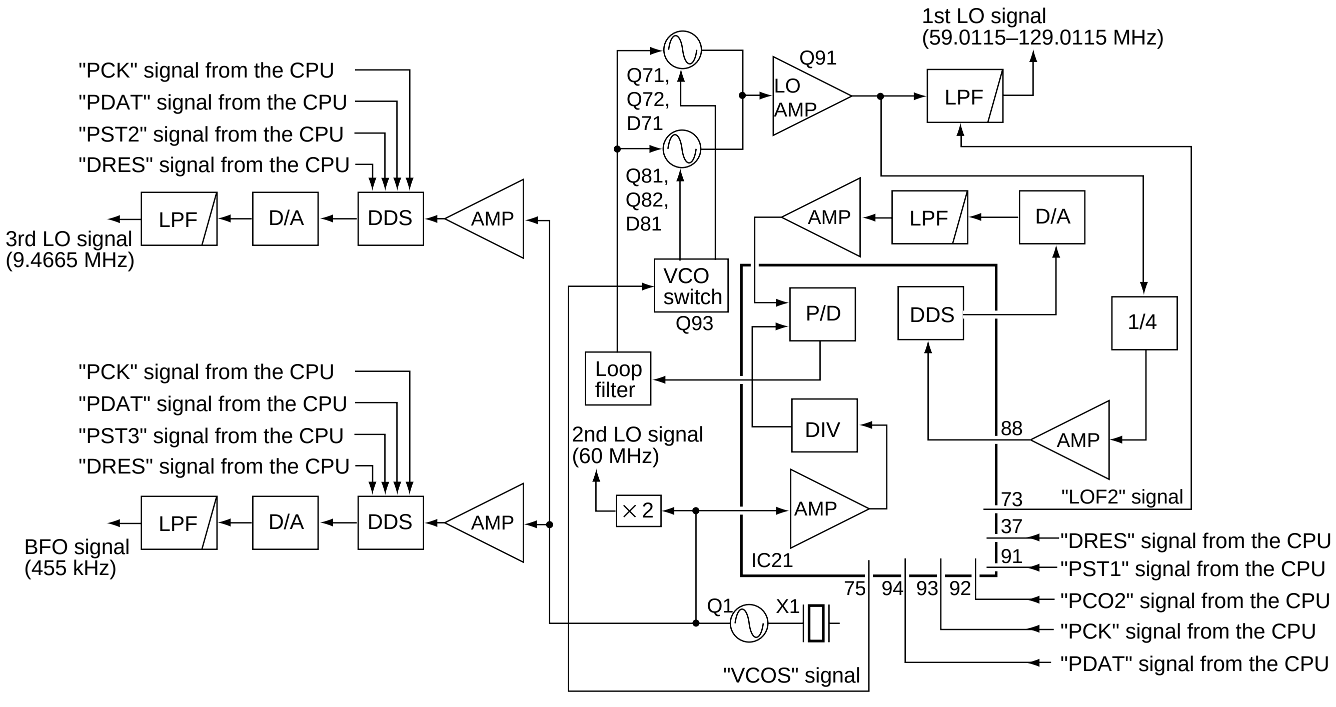
3-3-1 CPU (LOGIC UNIT)

The CPU (IC101) contains 8-bit one chip CPU. The CPU controls the operating frequency, mode, function, display, panel switches, panel volumes.

The panel switches are connected the CPU input port to the function of the panel switch or are connected some functions of panel switches to the A/D converter input port in the CPU.

The CI-V signal which is used for communicate to the personal computer is controlled by the level control circuit (IC401A, IC401B, Q401 and so on).

• PLL circuit



The CPU has the clock function. Thus, the CPU and the clock function have the crystal separately. The CPU has the 9.8304 MHz crystal (X112) for the CPU clock, and then the oscillated 9.8304 MHz signal is applied to the IC101, pin 7 and 8. The clock function has the 32.768 kHz crystal (X111). The oscillated 32.768 kHz signal is applied to the CPU (IC101, pin 4 and 5).

When the power is “OFF”, the EEPROM (IC231) is used for keep on saving the data of memory channels, and so on.

3-3-2 RESET CIRCUIT (LOGIC UNIT)

The reset circuit consists of Q391, D381, D382, D393, IC391 and IC392. When IC-R75 is supplied 13.8 V to connect the AC adapter, the “HV” signal is applied to the IC391, pin 2. The signal which is output from the IC391, pin 1 is applied to the IC392, pin 1. The signal is applied to the Q391, and is then output to the CPU (IC101, pin 9) as “CRES” reset signal.
A portion of the output signal from the IC392 is input to the CPU (IC101, pin 82) as “BKUP” signal to backup the clock data.

3-3-3 BACKUP SWITCH CIRCUIT (LOGIC UNIT)

IC-R75 has a backup switch circuit (Q511 and Q512). When IC-R75 is supplied to 13.8 V to connect the AC adapter, the “H5V” signal is applied to Q512, pin 4, and then Q511 is OFF. When the AC adapter is disconnected, the “BATT” signal from the battery (MAIN unit; BT1521) is applied to the Q511, and then Q512 is OFF.
The output signal is applied to the CPU (IC101, pin 31) as “B5V” signal to keep on working the clock function.
The backup battery is not used while the AC adapter is connected.

3-4 POWER SUPPLY CIRCUITS

3-4-1 VOLTAGE LINES (MAIN UNIT)

Line	Description
HVR	The voltage from the connected DC power supply.
H5V	Common 5 V converted from the “HVR” line by the +5 regulator circuit (IC1361).
14V	Common 14 V converted from the “”HVR” line by the regulator circuit (IC1371 and D1371). The output voltage is applied to the pre-amplifier (Q381 and Q382) via the PRE1 regulator circuit (Q383) and the IF-amplifier (Q471) via the R14V regulator circuit (Q472).
R8V	Receive 8 V converted from the “14V” line by the R8 regulator circuit (Q1381, Q1382 and D1381). The output voltage is applied to the IF-amplifier (Q912, Q471), the switch control circuit (Q151), and the driver circuit (IC561 and IC562, pin 9).
8V	Common 8 V converted from the “14V” line by the +8 regulator circuit (IC1391). The output signal is applied to the low-pass filter (IC1211A, pin 4), buffer amplifiers (Q1051 and Q801), the pre-amplifier (IC391) via the REG2 regulator circuit (Q391) and the AM detector circuit (IC2001, pin 25).
5V	Common 5 V converted from the “14V” line by the +5 regulator circuit (IC1401).
–5V	Common –5 V converted from the “14V” line by the –5 V DC-DC convertor circuit (IC1411, D1412 and D1413).

3-5 PORT ALLOCATIONS

3-5-1 CPU (LOGIC UNIT; IC101)

Pin number	Port name	Description
1	KEY6	Input port for [0] and [ENT] switch from the 10-key.
9	CRES	Input port for the reset signal. Low : While the reset switch is pushed.
11	PWRK	Input for the [POWER] switch. Low : While [POWER] switch is pushed.
12	DUD	Input port for the UP signal from the [MAIN DIAL].
14	DAST	Outputs strobe signals for the D/A converter (LOGIC unit; IC351).
15	RSTB	Outputs strobe signals for the shift registor (MAIN unit; IC551, IC552).
16	ISTB	Outputs strobe signals for the shift registor (MAIN unit; IC1602).
17	ASTB	Outputs strobe signals for the shift registor (MAIN unit; IC1601).
18	ECS	Outputs ECS signals for the EEPROM (LOGIC unit; IC231).
19	MCK	Outputs clock signal to the EEPROM and shift registors.
21	MDAT	Outputs data signals to the EEPROM, shift registors, etc.
22	PCK	Outputs clock signals to the PLL IC (PLL unit; IC21) and the DDS IC (PLL unit; IC151, IC201).
23	PST1	Outputs strobe signals for the PLL IC.
24	PDAT	Outputs data signals to the PLL IC and the DDS IC.
25	PST2	Outputs strobe signals for the DDS IC (IC151).
26	PST3	Outputs strobe signals for the DDS IC (IC201).
36	SSBK	Input port for the [SSB] switch.
37	CWK	Input port for the [CW] switch.
38	AMK	Input port for the [AM] switch.
39	FMK	Input port for the [FM] switch.
40	FILK	Input port for the [FIL] switch.
41	TSK	Input port for the [TS] switch.
42	PREK	Input port for the [P.AMP] switch.
43	ATTK	Input port for the [ATT] switch.
44	NRK	Input port for the [NR] switch.
45	ANFK	Input port for the [ANF] switch.
46	NBK	Input port for the [NB] switch.
47	AGCK	Input port for the [AGC] switch.
48	VMK	Input port for the [V/M] switch.
49	MWK	Input port for the [MW] switch.
50	CLRK	Input port for the [CLR] switch.
51	SELK	Input port for the [SEL] switch.
52	SCAK	Input port for the [SCAN] switch.
53	UPK	Input port for the [UP] switch.
54	DNK	Input port for the [DN] switch.
55	LOCK	Input port for the [LOCK] switch.
56	SETK	Input port for the [SET] switch.
57	CLKK	Input port for the [CLOCK] switch.
63	DRES	Outputs reset signal to the PLL IC and DDS IC. Low: PLL IC and DDS IC is reset.
77	PWRS	Outputs control signal for the regulator circuit (MAIN unit; IC1371 and D1371).
78	BEEP	Outputs beep audio signals.
79	RXS	Outputs control signal for the R8 regulator circuit (MAIN unit; Q1381, Q1382, D1381).
80	AGRS	• Outputs AGC reset signal to the AGC delay control circuit (MAIN unit; Q1066). • Outputs control signal for the AGC delay control circuit (MAIN unit; Q1061, Q1064–Q1066).
81	SQLS	Outputs squelch control signal to the AF selector circuit (MAIN unit; IC1201).
82	BKUP	Input port for the BKUP signal from the reset circuit (LOGIC unit; IC391).
83	DCK	Input port for the UP signal from the [MAIN DIAL].
84	RECS	Outputs control signal for the remote recording driver.
90	AFGL	Input port for the AF gain signal from the [AF] volume on the front panel.
91	RFGL	Input port for the SQL/RF gain signal from the [SQL/RF] volume on the front panel.
92	PB1L	Input port for the PBT1 signal from the [TWIN PBT] volume on the front panel.
93	PB2L	Input port for the PBT2 signal from the [TWIN PBT] volume on the front panel.
94	FMNL	Input port for the FM noise squelch signal from the FM detector circuit (MAIN unit; IC1001 and X1001).

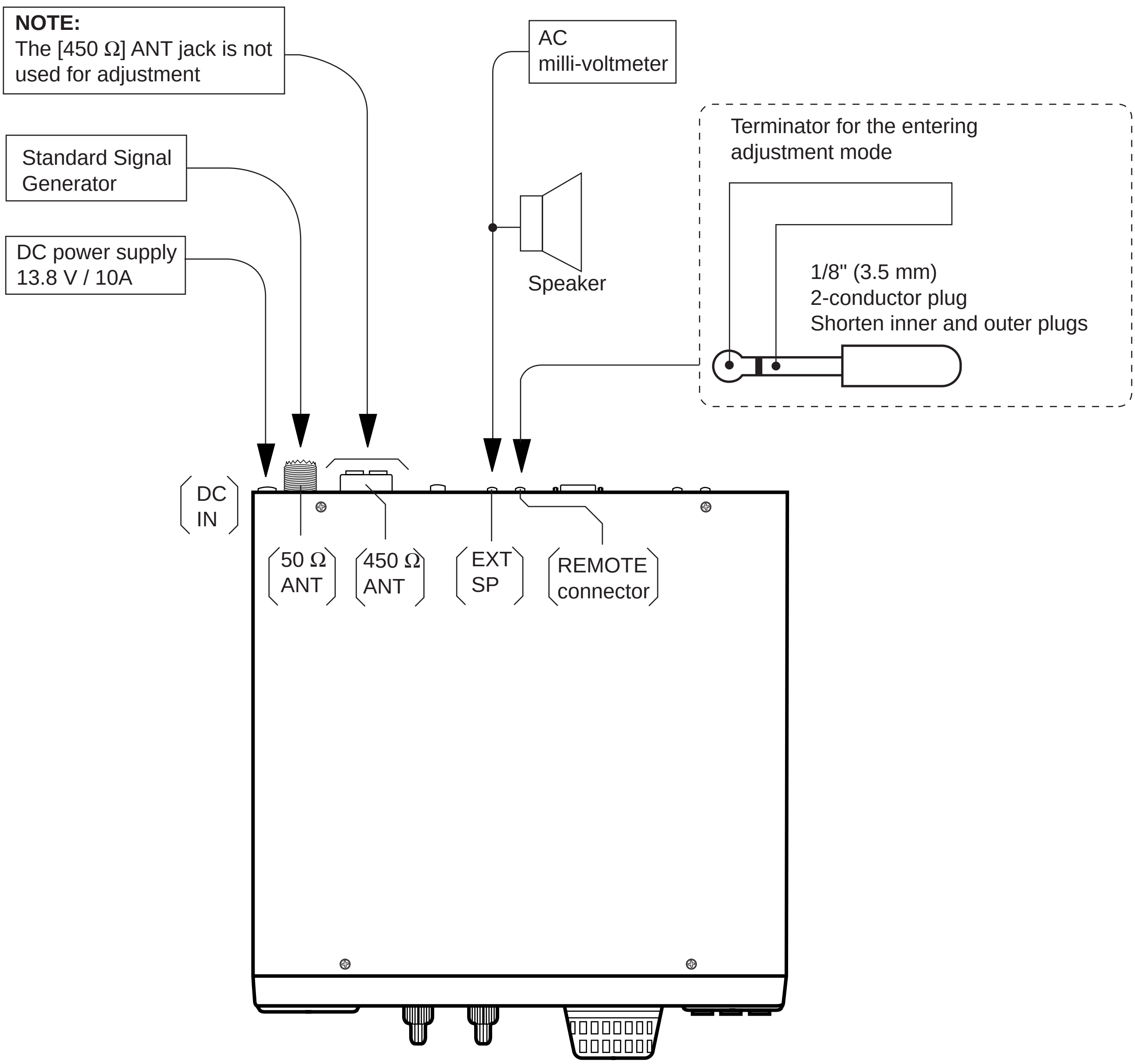
SECTION 4 ADJUSTMENT PROCEDURES

4-1 PREPARATION

■ REQUIRED TEST EQUIPMENT

EQUIPMENT	GRADE AND RANGE	EQUIPMENT	GRADE AND RANGE
DC power supply	Output voltage : 13.8 V DC Current capacity : 2 A or more	Oscilloscope	Frequency range : DC–20 MHz Measuring range : 0.01–20 V
Frequency counter	Frequency range : 0.1–60 MHz Frequency accuracy : ±1 ppm or better Sensitivity : 100 mV or better	AC millivoltmeter	Measuring range : 10 mV–10 V
		External speaker	Input impedance : 8 Ω Capacity : 4 W or more
Audio generator	Frequency range : 0.1–60 Hz Measuring range : 0.01–10 mV	Standard signal generator (SSG)	Frequency range : 0.1–300 MHz Output level : 0.1 µV–32 mV (–127 to –17 dBm)
DC Voltmeter	Input impedance : 50 kΩ/V DC or better		

■ CONNECTION

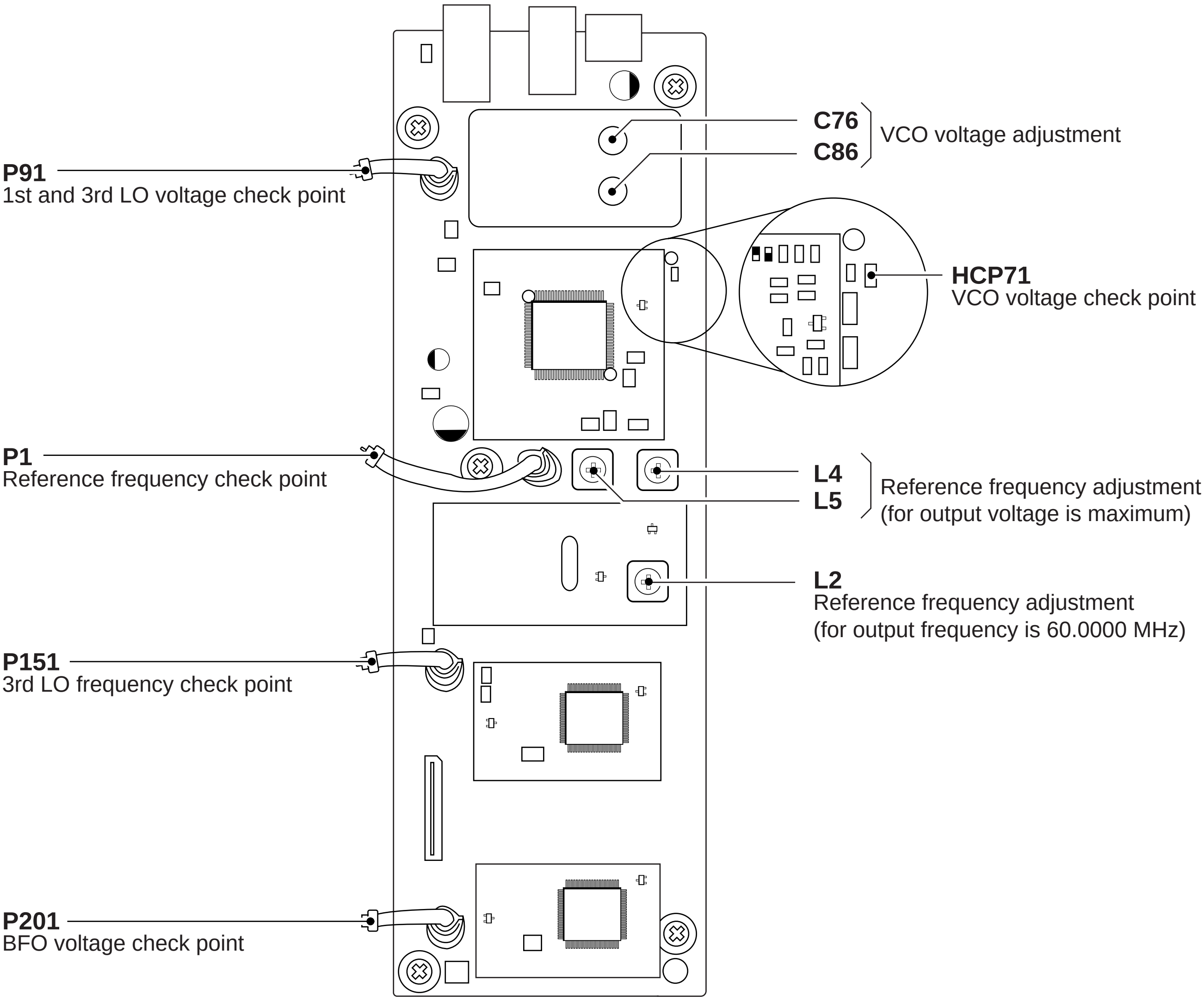


4-2 PLL ADJUSTMENT

ADJUSTMENT		ADJUSTMENT CONDITION	MEASUREMENT		VALUE	ADJUSTMENT POINT	
			UNIT	LOCATION		UNIT	ADJUST
REFERENCE FREQUENCY	1	• Displayed frequency : 29.99999 MHz • Mode : USB	PLL	Connect the frequency counter to P1.	60.00000 MHz	PLL	L2
	2			Connect the RF voltmater to P1.	Maximum voltage		L4, L5
VCO VOLTAGE	1	• Displayed frequency : 29.99999 MHz • Mode : USB	PLL	Connect the DC voltmeter to HCP71.	4.0 V	PLL	C86
	2	• Displayed frequency : 0.03000 MHz • Mode : USB			More than 0.8 V		Verify
	3	• Displayed frequency : 60.00000 MHz • Mode : USB			4.0 V	PLL	C76
	4	• Displayed frequency : 30.00000 MHz • Mode: USB			More than 0.8 V		Verify
1ST LO VOLTAGE	1	• Displayed frequency : 30–60.00000 MHz • Mode : USB	PLL	Connect the RF voltmeter to P91.	More than 0.18 V		Verify
3RD LO VOLTAGE	1	• Displayed frequency : 30–60.00000 MHz • Mode : USB	PLL	Connect the RF voltmeter to P91.	More than 0.022 V		Verify
3RD LO FREQUENCY	1	• Displayed frequency : 9.4615 MHz • Mode : FM	PLL	Connect the frequency counter to P151.	9.4614–9.4616 MHz		Verify
BFO VOLTAGE	1	• Displayed frequency : 14.100000 MHz • Mode : USB	PLL	Connect the RF voltmeter to P201.	More than 0.022 V		Verity
	2	• Displayed frequency : 14.100000 MHz • Mode : AM			Less than 280 µV		

*This output level of the standard signal generator (SSG) is indicated as SSG's open circuit.

• **PLL UNIT**



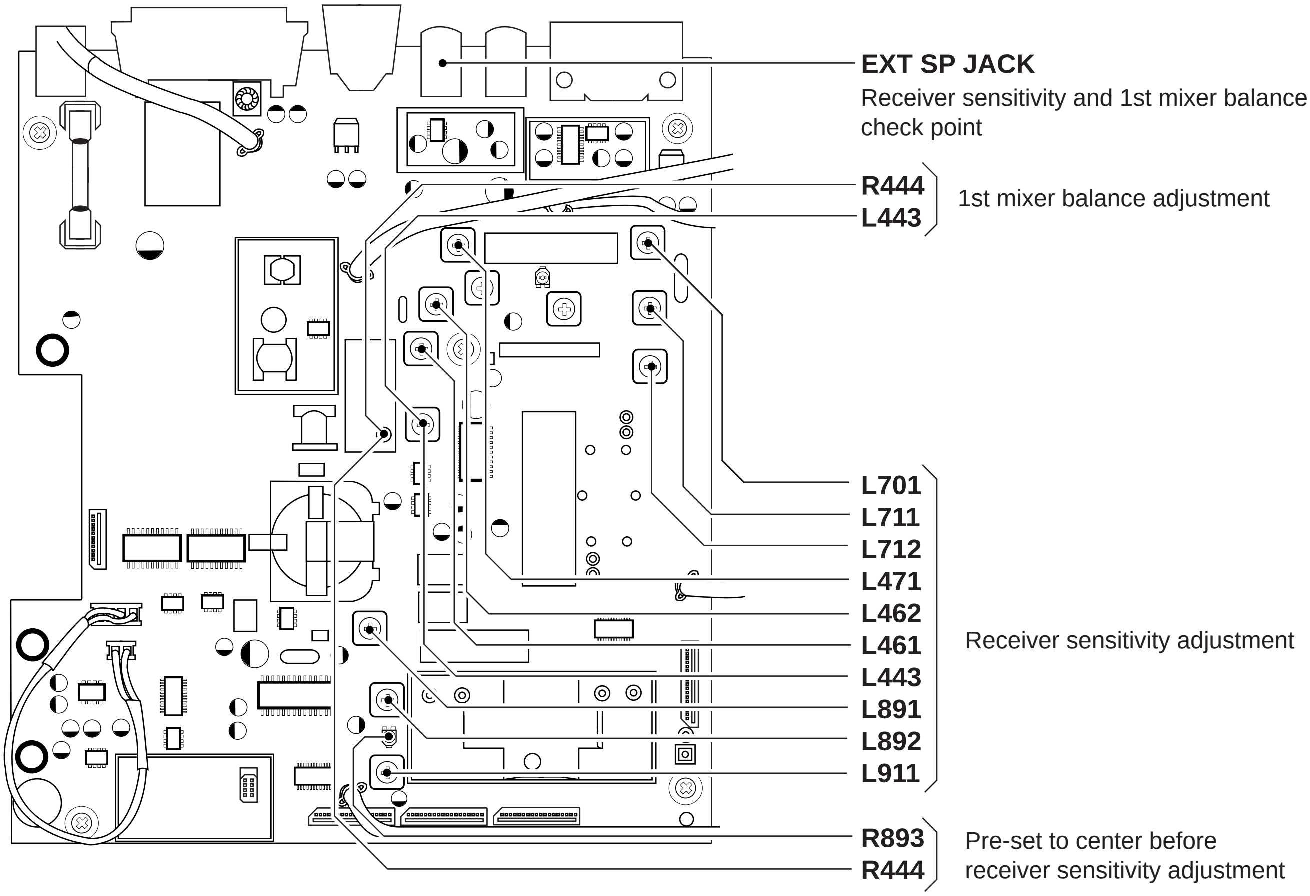
P91
1st and 3rd LO voltage check point
C76
C86
VCO voltage adjustment
HCP71
VCO voltage check point
P1
Reference frequency check point
L4
L5
Reference frequency adjustment
(for output voltage is maximum)
L2
Reference frequency adjustment
(for output frequency is 60.0000 MHz)
P151
3rd LO frequency check point
P201
BFO voltage check point

4-3 RECEIVER ADJUSTMENTS

ADJUSTMENT		ADJUSTMENT CONDITION	MEASUREMENT		VALUE	ADJUSTMENT POINT	
			UNIT	LOCATION		UNIT	ADJUST
RECEIVER SENSITIVITY	1	• Displayed frequency : 14.10000 MHz • Mode : USB • PREAMP1 : ON • ANT select : ANT1 • AGC : FAST • NOISE BLANKER : OFF • RF/SQL : CENTER • PBT1/PBT2 : CENTER • IF FILTER1 : 2.4 kHz • IF FILTER2 : 2.4 kHz	Rear Panel	Connect the AC milli-volt meter to the [EXT SP] jack with an 8 Ω load.	Pre-set to center	MAIN	R444 R898
	2	• Connect an SSG to the antenna connector1 and set as: Frequency : 14.10150 MHz Level : 22 µV* (–13 dBµ) Modulation : OFF • Receiving			Maximum output level	MAIN	L443, L461, L462, L471, L701, L711, L712, L891, L892, L911
1ST MIXER BALANCE	1	• Displayed frequency : 0.10000 MHz • PREAMP1 : OFF • set an SSG level as : OFF • Receiving	Rear panel	Connect an oscillo-scope to the [EXT SP] jack with 8 Ω load.	Minimum noise level	MAIN	L443, R444

*This output level of the standard signal generator (SSG) is indicated as SSG's open circuit.

• MAIN UNIT

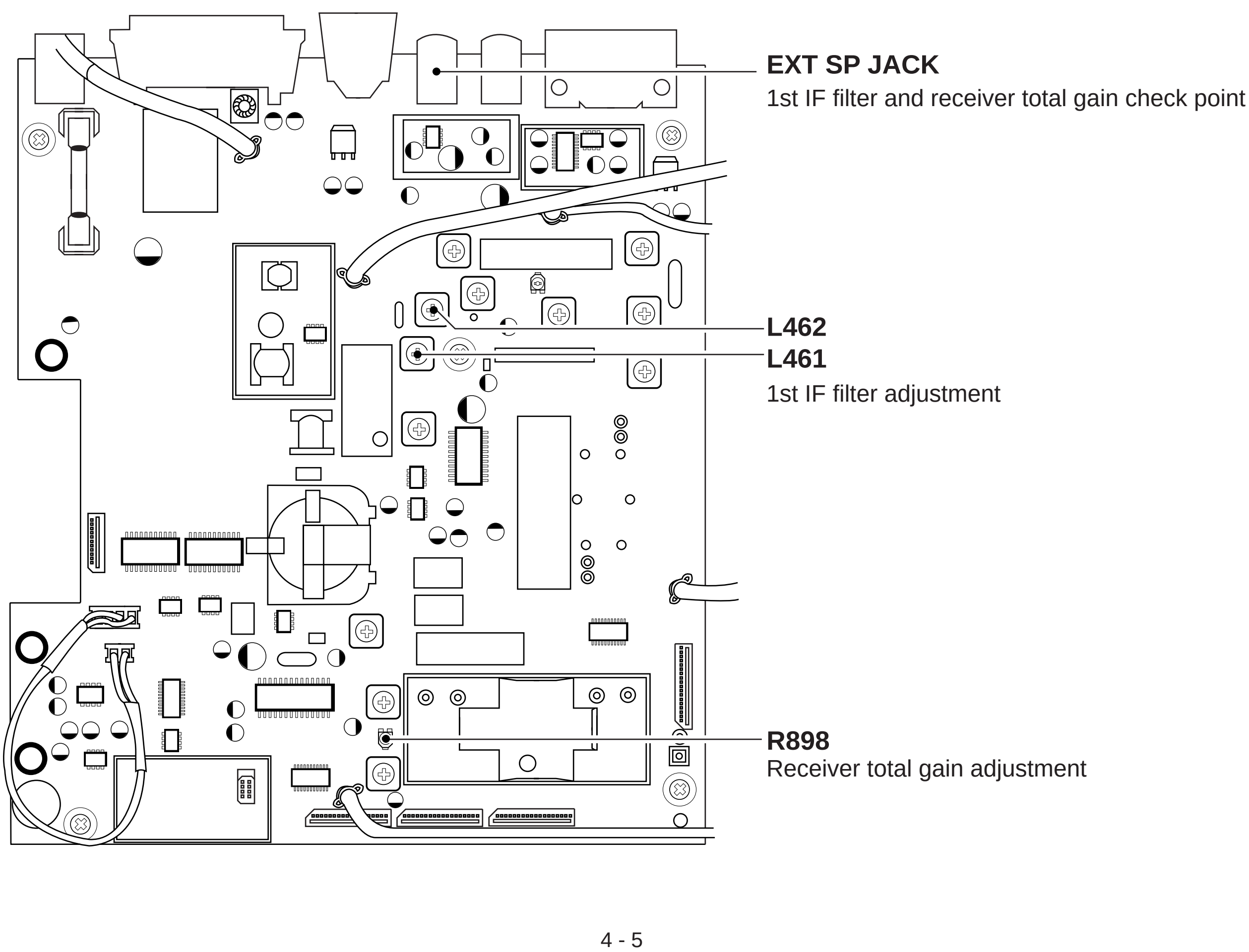


RECEIVER ADJUSTMENTS (continued)

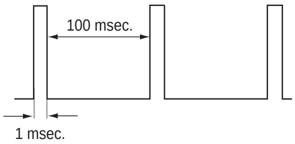
ADJUSTMENT		ADJUSTMENT CONDITION	MEASUREMENT		VALUE	ADJUSTMENT POINT	
			UNIT	LOCATION		UNIT	ADJUST
1ST IF FILTER	1	• Displayed frequency : 14.10000 MHz • Mode : FM • PREAMP1 : ON • IF FILTER1 : 15 kHz • IF FILTER2 : 6 kHz • set an SSG as Frequency : 14.10000 MHz Level : 0.32 µV* (–10 dBµ) Deviation : ±3.5 kHz Modulation : 1 kHz • Receiving	Rear panel	Connect the AC milli-volt meter to the [EXT SP] jack with an 8 Ω load.	Maximum output level	MAIN	L461, L462
RECEIVER TOTAL GAIN	1	• Displayed frequency : 14.10000 MHz • Mode : USB • PREAMP1 : OFF • IF FILTER1 : 2.4 kHz • IF FILTER2 : 2.4 kHz • Set an SSG as Frequency : 14.10150 MHz Level : 500 µV* (54 dBµ) Modulation : OFF	Rear panel	Connect the AC milli-volt meter to the [EXT SP] jack with an 8 Ω load.	0 dB (1.0 V)	Front panel	[AF GAIN] control
	2	• Set an SSG level as : OFF • Receiving			–30 dB (10 mV)	MAIN	R898

*This output level of the standard signal generator (SSG) is indicated as SSG's open circuit.

• MAIN UNIT

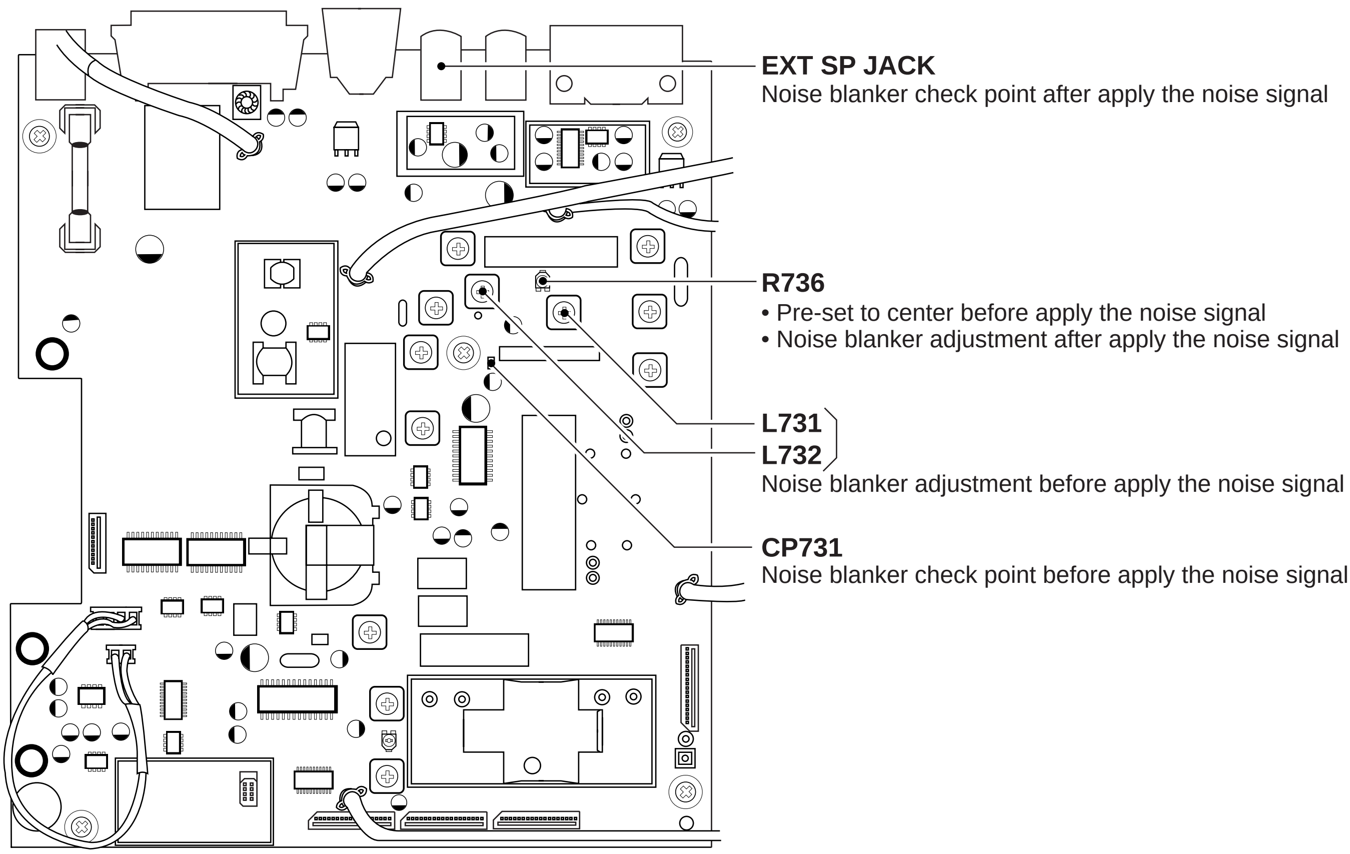


RECEIVER ADJUSTMENTS (CONTINUED)

ADJUSTMENT		ADJUSTMENT CONDITION	MEASUREMENT		VALUE	ADJUSTMENT POINT	
			UNIT	LOCATION		UNIT	ADJUST
NOISE BLANKER	1	• Displayed frequency : 14.10000 MHz • Mode : USB • Noise Blanker : OFF • PREAMP1. : ON • Set an SSG as Frequency : 14.10000 MHz Level : 18 µV* (25 dBµ) Modulation : OFF	MAIN	Connect the oscilloscope to the check point CP731.	Pre-set to center	MAIN	R736
					Minimun voltage		L731, L732
	2	• Apply the following signal to the [ANT1] connector 	Rear Panel	Connect the oscilloscope to the [EXT SP] jack with an 8 Ω load.	Noise is blanked when the [NB] switch is ON.	MAIN	R736

*This output level of the standard signal generator (SSG) is indicated as SSG's open circuit.

• MAIN UNIT



4-4 SET MODE ADJUSTMENT

ADJUSTMENT		ADJUSTMENT CONDITION	DISPLAY	OPERATION
ENTERING ADJUSTMENT SET MODE		• Turn power OFF • Connect a terminator to the [REMOTE] connector on the rear panel. • While pushing "SET[ANT] and "CLOCK" keys, and turn power ON.	PBT SEt	• When success entering adjustment set mode, shown "PBT SET" on the display. • Then advance to the following setting, or push "UP" key to scroll the display.
PBT VOLUME	1	• Connect an SSG to the antenna connector1 and set as: Frequency : 14.15150 MHz Level : 50 mV* (–13 dBm) Modulation : OFF • Preset both the inner and outer "TWIN PBT" controls to 12 o'clock position. • Receiving	GOOD	• Push "SET[ANT]" key.to set the PBT level. • When the PBT level is true, shown "GOOD" on the display.
S-METER	1	• Set an SSG level as : OFF	S0 LV	• When S0 level of S-meter adjustment mode entering, displayed "S0 LV". • Push the "SET[ANT]" key to set the S0 level.
	2	• Set an SSG level as : 35 µV* (31 dBµ)	S9 LV	• When S9 level of S-meter adjustment mode entering, displayed "S9 LV". • Push the "SET[ANT]" key to set the S9 level.
	3	• Set an SSG level as : 28 mV* (89 dBµ)	+60 LV	• When +60 dB level of S-meter adjustment mode entering, displayed "+60 LV". • Push the "SET[ANT]" key to set the 60 dB level.
	4		END	• When the S-meter adjustment is end, displayed "END".
FILTER CALIBRATION	1	• Set an SSG level as : 10 µV* (20 dBµ)	FIL CAL	• When filter calibration adjustment mode entering, displayed "FIL CAL". • Push the "SET[ANT]" key to set the filter calibration. • Emit to the beep audio.
	2	• Turn power OFF to exit the adjustment set mode.		

*This output level of the standard signal generator (SSG) is indicated as SSG's open circuit.

SECTION 5 PARTS LIST

[VR BOARD]

REF NO.	ORDER NO.	DESCRIPTION	
R131	7210003040	VARIABLE	TP96D26-22F-10KBX2-2240
R141	7210003030	VARIABLE	TP96D00-22F-10KBX2-2240
R143	7030003540	S.RESISTOR	ERJ3GEYJ 682 V (6.8 kΩ)
J101	6510020710	S.CONNECTOR	52793-1090
EP1	0910051172	PCB	B 5271B

[PHONE BOARD]

REF NO.	ORDER NO.	DESCRIPTION	
L121	6200003950	S.COIL	HF50ACC 322513-T
R121	7030006070	S.RESISTOR	ERJ12YJ101H (100 Ω)
R122	7030006070	S.RESISTOR	ERJ12YJ101H (100 Ω)
C121	4030006880	S.CERAMIC	C1608 JB 1H 472K-T-A
C122	4030006880	S.CERAMIC	C1608 JB 1H 472K-T-A
C123	4030006880	S.CERAMIC	C1608 JB 1H 472K-T-A
J101	6510020710	S.CONNECTOR	52793-1090
J121	6510021480	CONNECTOR	HLJ2307-01-3070
EP1	0910051182	PCB	B 5272B

[LOGIC BOARD]

REF NO.	ORDER NO.	DESCRIPTION	
IC101	1140008250	S.IC	HD6433837SC58H
IC231	1140005880	S.IC	X25320S8I-2.7T6
IC351	1110003690	S.IC	M62354GP 75EC
IC391	1130009110	S.IC	S-80942ANMP-DD6-T2
IC392	1130006440	S.IC	TC7S08F (TE85R)
IC401	1130004921	S.IC	TC74HC04AF (TP1)
Q351	1590000680	S.TRANSISTOR	DTC114EUA T106
Q391	1530002850	S.TRANSISTOR	2SC4116-BL (TE85R)
Q401	1590001650	S.TRANSISTOR	XP4601 (TX)
Q421	1590000720	S.TRANSISTOR	DTA144EUA T106
Q511	1510000510	S.TRANSISTOR	2SA1576A T106R
Q512	1590001650	S.TRANSISTOR	XP4601 (TX)
D381	1730002320	S.ZENER	MA8051-M (TX)
D382	1790000970	S.DIODE	MA729 (TX)
D393	1750000550	S.DIODE	1SS355 TE-17
D401	1750000550	S.DIODE	1SS355 TE-17
D461	1730002530	S.ZENER	NNCD6.2G-T1
X111	6050009460	S.XTAL	CM200S SMD (32.768KHZ)
X112	6050009870	S.XTAL	CR-567 (9.8304 MHz)
L491	6200003950	S.COIL	HF50ACC 322513-T
L492	6200003950	S.COIL	HF50ACC 322513-T
L501	6200002970	S.COIL	NL 322522T-121J
L502	6200002970	S.COIL	NL 322522T-121J

[LOGIC BOARD]

REF NO.	ORDER NO.	DESCRIPTION	
L503	6200003950	S.COIL	HF50ACC 322513-T
R112	7030003800	S.RESISTOR	ERJ3GEYJ 105 V (1 MΩ)
R121	7030003440	S.RESISTOR	ERJ3GEYJ 102 V (1 kΩ)
R122	7030003440	S.RESISTOR	ERJ3GEYJ 102 V (1 kΩ)
R123	7030003440	S.RESISTOR	ERJ3GEYJ 102 V (1 kΩ)
R124	7030003440	S.RESISTOR	ERJ3GEYJ 102 V (1 kΩ)
R125	7030003440	S.RESISTOR	ERJ3GEYJ 102 V (1 kΩ)
R126	7030003440	S.RESISTOR	ERJ3GEYJ 102 V (1 kΩ)
R127	7030003360	S.RESISTOR	ERJ3GEYJ 221 V (220 Ω)
R128	7030003440	S.RESISTOR	ERJ3GEYJ 102 V (1 kΩ)
R129	7030003440	S.RESISTOR	ERJ3GEYJ 102 V (1 kΩ)
R130	7030003440	S.RESISTOR	ERJ3GEYJ 102 V (1 kΩ)
R131	7030003440	S.RESISTOR	ERJ3GEYJ 102 V (1 kΩ)
R141	7030003440	S.RESISTOR	ERJ3GEYJ 102 V (1 kΩ)
R142	7030003440	S.RESISTOR	ERJ3GEYJ 102 V (1 kΩ)
R143	7030003440	S.RESISTOR	ERJ3GEYJ 102 V (1 kΩ)
R144	7030003440	S.RESISTOR	ERJ3GEYJ 102 V (1 kΩ)
R145	7030003440	S.RESISTOR	ERJ3GEYJ 102 V (1 kΩ)
R146	7030003440	S.RESISTOR	ERJ3GEYJ 102 V (1 kΩ)
R147	7030003440	S.RESISTOR	ERJ3GEYJ 102 V (1 kΩ)
R148	7030003440	S.RESISTOR	ERJ3GEYJ 102 V (1 kΩ)
R149	7030003440	S.RESISTOR	ERJ3GEYJ 102 V (1 kΩ)
R150	7030003440	S.RESISTOR	ERJ3GEYJ 102 V (1 kΩ)
R151	7030003440	S.RESISTOR	ERJ3GEYJ 102 V (1 kΩ)
R152	7030003440	S.RESISTOR	ERJ3GEYJ 102 V (1 kΩ)
R153	7030003440	S.RESISTOR	ERJ3GEYJ 102 V (1 kΩ)
R154	7030003440	S.RESISTOR	ERJ3GEYJ 102 V (1 kΩ)
R155	7030003440	S.RESISTOR	ERJ3GEYJ 102 V (1 kΩ)
R161	7030003640	S.RESISTOR	ERJ3GEYJ 473 V (47 kΩ)
R162	7030003640	S.RESISTOR	ERJ3GEYJ 473 V (47 kΩ)
R163	7030003640	S.RESISTOR	ERJ3GEYJ 473 V (47 kΩ)
R171	7030003440	S.RESISTOR	ERJ3GEYJ 102 V (1 kΩ)
R172	7030003440	S.RESISTOR	ERJ3GEYJ 102 V (1 kΩ)
R173	7030003440	S.RESISTOR	ERJ3GEYJ 102 V (1 kΩ)
R174	7030003440	S.RESISTOR	ERJ3GEYJ 102 V (1 kΩ)
R175	7030003440	S.RESISTOR	ERJ3GEYJ 102 V (1 kΩ)
R176	7030003440	S.RESISTOR	ERJ3GEYJ 102 V (1 kΩ)
R177	7030003440	S.RESISTOR	ERJ3GEYJ 102 V (1 kΩ)
R178	7030003440	S.RESISTOR	ERJ3GEYJ 102 V (1 kΩ)
R179	7030003440	S.RESISTOR	ERJ3GEYJ 102 V (1 kΩ)
R191	7030003440	S.RESISTOR	ERJ3GEYJ 102 V (1 kΩ)
R192	7030003440	S.RESISTOR	ERJ3GEYJ 102 V (1 kΩ)
R193	7030003440	S.RESISTOR	ERJ3GEYJ 102 V (1 kΩ)
R194	7030003440	S.RESISTOR	ERJ3GEYJ 102 V (1 kΩ)
R195	7030003440	S.RESISTOR	ERJ3GEYJ 102 V (1 kΩ)
R196	7030003440	S.RESISTOR	ERJ3GEYJ 102 V (1 kΩ)
R197	7030003440	S.RESISTOR	ERJ3GEYJ 102 V (1 kΩ)
R198	7030003680	S.RESISTOR	ERJ3GEYJ 104 V (100 kΩ)
R201	7030003440	S.RESISTOR	ERJ3GEYJ 102 V (1 kΩ)
R202	7030003440	S.RESISTOR	ERJ3GEYJ 102 V (1 kΩ)
R203	7030003440	S.RESISTOR	ERJ3GEYJ 102 V (1 kΩ)
R204	7030003440	S.RESISTOR	ERJ3GEYJ 102 V (1 kΩ)
R205	7030003440	S.RESISTOR	ERJ3GEYJ 102 V (1 kΩ)
R206	7030003440	S.RESISTOR	ERJ3GEYJ 102 V (1 kΩ)
R208	7030003440	S.RESISTOR	ERJ3GEYJ 102 V (1 kΩ)
R209	7030003440	S.RESISTOR	ERJ3GEYJ 102 V (1 kΩ)
R210	7030003440	S.RESISTOR	ERJ3GEYJ 102 V (1 kΩ)
R211	7030003440	S.RESISTOR	ERJ3GEYJ 102 V (1 kΩ)
R221	7030003400	S.RESISTOR	ERJ3GEYJ 471 V (470 Ω)
R223	7030003560	S.RESISTOR	ERJ3GEYJ 103 V (10 kΩ)
R224	7030003560	S.RESISTOR	ERJ3GEYJ 103 V (10 kΩ)
R225	7030003560	S.RESISTOR	ERJ3GEYJ 103 V (10 kΩ)
R231	7030003680	S.RESISTOR	ERJ3GEYJ 104 V (100 kΩ)
R251	7030003540	S.RESISTOR	ERJ3GEYJ 682 V (6.8 kΩ)
R252	7030003540	S.RESISTOR	ERJ3GEYJ 682 V (6.8 kΩ)
R253	7030003540	S.RESISTOR	ERJ3GEYJ 682 V (6.8 kΩ)
R254	7030003540	S.RESISTOR	ERJ3GEYJ 682 V (6.8 kΩ)
R255	7030003540	S.RESISTOR	ERJ3GEYJ 682 V (6.8 kΩ)
R256	7030003540	S.RESISTOR	ERJ3GEYJ 682 V (6.8 kΩ)
R257	7030003540	S.RESISTOR	ERJ3GEYJ 682 V (6.8 kΩ)
R258	7030003540	S.RESISTOR	ERJ3GEYJ 682 V (6.8 kΩ)
R259	7030003540	S.RESISTOR	ERJ3GEYJ 682 V (6.8 kΩ)
R260	7030003540	S.RESISTOR	ERJ3GEYJ 682 V (6.8 kΩ)
R261	7030003540	S.RESISTOR	ERJ3GEYJ 682 V (6.8 kΩ)

S.=Surface mount

[LOGIC BOARD]

REF NO.	ORDER NO.	DESCRIPTION	
R262	7030003540	S.RESISTOR	ERJ3GEYJ 682 V (6.8 kΩ)
R271	7030003640	S.RESISTOR	ERJ3GEYJ 473 V (47 kΩ)
R272	7030003640	S.RESISTOR	ERJ3GEYJ 473 V (47 kΩ)
R273	7030003640	S.RESISTOR	ERJ3GEYJ 473 V (47 kΩ)
R274	7030003640	S.RESISTOR	ERJ3GEYJ 473 V (47 kΩ)
R275	7030003640	S.RESISTOR	ERJ3GEYJ 473 V (47 kΩ)
R276	7030003640	S.RESISTOR	ERJ3GEYJ 473 V (47 kΩ)
R277	7030003640	S.RESISTOR	ERJ3GEYJ 473 V (47 kΩ)
R278	7030003640	S.RESISTOR	ERJ3GEYJ 473 V (47 kΩ)
R279	7030003640	S.RESISTOR	ERJ3GEYJ 473 V (47 kΩ)
R280	7030003640	S.RESISTOR	ERJ3GEYJ 473 V (47 kΩ)
R281	7030003640	S.RESISTOR	ERJ3GEYJ 473 V (47 kΩ)
R282	7030003640	S.RESISTOR	ERJ3GEYJ 473 V (47 kΩ)
R283	7030003640	S.RESISTOR	ERJ3GEYJ 473 V (47 kΩ)
R284	7030003640	S.RESISTOR	ERJ3GEYJ 473 V (47 kΩ)
R285	7030003640	S.RESISTOR	ERJ3GEYJ 473 V (47 kΩ)
R286	7030003640	S.RESISTOR	ERJ3GEYJ 473 V (47 kΩ)
R287	7030003640	S.RESISTOR	ERJ3GEYJ 473 V (47 kΩ)
R288	7030003640	S.RESISTOR	ERJ3GEYJ 473 V (47 kΩ)
R289	7030003640	S.RESISTOR	ERJ3GEYJ 473 V (47 kΩ)
R290	7030003640	S.RESISTOR	ERJ3GEYJ 473 V (47 kΩ)
R291	7030003640	S.RESISTOR	ERJ3GEYJ 473 V (47 kΩ)
R292	7030003640	S.RESISTOR	ERJ3GEYJ 473 V (47 kΩ)
R335	7030003640	S.RESISTOR	ERJ3GEYJ 473 V (47 kΩ)
R351	7030003540	S.RESISTOR	ERJ3GEYJ 682 V (6.8 kΩ)
R352	7030003540	S.RESISTOR	ERJ3GEYJ 682 V (6.8 kΩ)
R361	7030003720	S.RESISTOR	ERJ3GEYJ 224 V (220 kΩ)
R362	7030003720	S.RESISTOR	ERJ3GEYJ 224 V (220 kΩ)
R381	7030009720	S.RESISTOR	ERJ12YJ102H (1 kΩ)
R382	7030003640	S.RESISTOR	ERJ3GEYJ 473 V (47 kΩ)
R391	7030003630	S.RESISTOR	ERJ3GEYJ 393 V (39 kΩ)
R392	7030003650	S.RESISTOR	ERJ3GEYJ 563 V (56 kΩ)
R393	7030003640	S.RESISTOR	ERJ3GEYJ 473 V (47 kΩ)
R394	7030003440	S.RESISTOR	ERJ3GEYJ 102 V (1 kΩ)
R395	7030003760	S.RESISTOR	ERJ3GEYJ 474 V (470 kΩ)
R396	7030003720	S.RESISTOR	ERJ3GEYJ 224 V (220 kΩ)
R397	7030003720	S.RESISTOR	ERJ3GEYJ 224 V (220 kΩ)
R398	7030003680	S.RESISTOR	ERJ3GEYJ 104 V (100 kΩ)
R399	7030003560	S.RESISTOR	ERJ3GEYJ 103 V (10 kΩ)
R401	7030003620	S.RESISTOR	ERJ3GEYJ 333 V (33 kΩ)
R402	7030003540	S.RESISTOR	ERJ3GEYJ 682 V (6.8 kΩ)
R403	7030003680	S.RESISTOR	ERJ3GEYJ 104 V (100 kΩ)
R404	7030003580	S.RESISTOR	ERJ3GEYJ 153 V (15 kΩ)
R405	7030003680	S.RESISTOR	ERJ3GEYJ 104 V (100 kΩ)
R421	7030003400	S.RESISTOR	ERJ3GEYJ 471 V (470 Ω)
R422	7030003680	S.RESISTOR	ERJ3GEYJ 104 V (100 kΩ)
R423	7030003560	S.RESISTOR	ERJ3GEYJ 103 V (10 kΩ)
R511	7030003840	S.RESISTOR	ERJ3GEYJ 225 V (2.2 MΩ)
R512	7030003560	S.RESISTOR	ERJ3GEYJ 103 V (10 kΩ)
R513	7030003630	S.RESISTOR	ERJ3GEYJ 393 V (39 kΩ)
R514	7030003540	S.RESISTOR	ERJ3GEYJ 682 V (6.8 kΩ)
C101	4030008630	S.CERAMIC	C1608 JF 1C 104Z-T-A
C102	4030008630	S.CERAMIC	C1608 JF 1C 104Z-T-A
C103	4550006250	S.TANTALUM	TEMSVA 1A 106M-8L
C104	4030008630	S.CERAMIC	C1608 JF 1C 104Z-T-A
C105	4030008630	S.CERAMIC	C1608 JF 1C 104Z-T-A
C111	4030009990	S.CERAMIC	C1608 CH 1H 200J-T-A
C112	4030007050	S.CERAMIC	C1608 CH 1H 220J-T-A
C113	4030008560	S.CERAMIC	C1608 CH 1H 300J-T-A
C114	4030008560	S.CERAMIC	C1608 CH 1H 300J-T-A
C201	4030008630	S.CERAMIC	C1608 JF 1C 104Z-T-A
C202	4030008630	S.CERAMIC	C1608 JF 1C 104Z-T-A
C203	4030008630	S.CERAMIC	C1608 JF 1C 104Z-T-A
C204	4030008630	S.CERAMIC	C1608 JF 1C 104Z-T-A
C205	4030008630	S.CERAMIC	C1608 JF 1C 104Z-T-A
C206	4030008630	S.CERAMIC	C1608 JF 1C 104Z-T-A
C221	4030008630	S.CERAMIC	C1608 JF 1C 104Z-T-A
C231	4030008630	S.CERAMIC	C1608 JF 1C 104Z-T-A
C251	4030008630	S.CERAMIC	C1608 JF 1C 104Z-T-A
C252	4030008630	S.CERAMIC	C1608 JF 1C 104Z-T-A
C253	4030008630	S.CERAMIC	C1608 JF 1C 104Z-T-A
C254	4030008630	S.CERAMIC	C1608 JF 1C 104Z-T-A
C255	4030008630	S.CERAMIC	C1608 JF 1C 104Z-T-A
C256	4030008630	S.CERAMIC	C1608 JF 1C 104Z-T-A
C351	4030008630	S.CERAMIC	C1608 JF 1C 104Z-T-A
C352	4510005430	S.ELECTROLYTIC	ECEV0JA220SR
C392	4030013720	S.CERAMIC	GRM39 B 224K 10PT
C393	4030013720	S.CERAMIC	GRM39 B 224K 10PT
C394	4030007050	S.CERAMIC	C1608 CH 1H 220J-T-A
C395	4030008630	S.CERAMIC	C1608 JF 1C 104Z-T-A

[LOGIC BOARD]

REF NO.	ORDER NO.	DESCRIPTION		
C401	4030008630	S.CERAMIC	C1608 JF 1C 104Z-T-A	
C451	4030008630	S.CERAMIC	C1608 JF 1C 104Z-T-A	
C452	4030008630	S.CERAMIC	C1608 JF 1C 104Z-T-A	
C453	4030008630	S.CERAMIC	C1608 JF 1C 104Z-T-A	
C454	4030008630	S.CERAMIC	C1608 JF 1C 104Z-T-A	
C461	4030008630	S.CERAMIC	C1608 JF 1C 104Z-T-A	
C502	4030008630	S.CERAMIC	C1608 JF 1C 104Z-T-A	
C503	4030008630	S.CERAMIC	C1608 JF 1C 104Z-T-A	
C505	4030008630	S.CERAMIC	C1608 JF 1C 104Z-T-A	
J411	6510019980	S.CONNECTOR	52808-1690	
J451	6510019970	S.CONNECTOR	52808-1090	
J461	6510018970	S.CONNECTOR	B4B-PH-SM3-TB	
J471	6510019970	S.CONNECTOR	52808-1090	
J491	6510018960	S.CONNECTOR	B2B-PH-SM3-TB	
J501	6510019980	S.CONNECTOR	52808-1690	
J521	6510019980	S.CONNECTOR	52808-1690	
J541	6510019980	S.CONNECTOR	52808-1690	
W161	7030003860	S.JUMPER	ERJ3GE JPW V	[SEA] only
W162	7030003860	S.JUMPER	ERJ3GE JPW V	[SEA] only
W163	7030003860	S.JUMPER	ERJ3GE JPW V	[SEA] only
W401	7030003860	S.JUMPER	ERJ3GE JPW V	
WS1	8970023370	CABLE	RX2240 J lead set (1) /LO	
EP1	0910051163	PCB	B 5270C	
EP501	6910012350	S.BEAD	MMZ1608Y 102BT	
EP502	6910012350	S.BEAD	MMZ1608Y 102BT	
EP521	6910012350	S.BEAD	MMZ1608Y 102BT	
EP522	6910012350	S.BEAD	MMZ1608Y 102BT	
EP523	6910012350	S.BEAD	MMZ1608Y 102BT	
EP524	6910012350	S.BEAD	MMZ1608Y 102BT	
EP525	6910012350	S.BEAD	MMZ1608Y 102BT	
EP526	6910012350	S.BEAD	MMZ1608Y 102BT	
EP527	6910012350	S.BEAD	MMZ1608Y 102BT	

[FRONT UNIT]

REF NO.	ORDER NO.	DESCRIPTION	
SP1	2510000670	SPEAKER	VS-50-0827
W3	8900008930	CABLE	OPC-885
W4	8900008940	CABLE	OPC-886
W5	8900007000	CABLE	OPC-684
WS1	8600036530	CABLE	RX2240 P01FR
EP1	6910012480	E.OTHER	RMS20-250-201-1R
EP2	6450001230	E.OTHER	HLJ0999-01-480

[DISPLAY BOARD]

REF NO.	ORDER NO.	DESCRIPTION	
IC101	1140005130	S.IC	HD66100F
Q11	1530002850	S.TRANSISTOR	2SC4116-BL (TE85R)
Q21	1530002850	S.TRANSISTOR	2SC4116-BL (TE85R)
Q31	1530002850	S.TRANSISTOR	2SC4116-BL (TE85R)
Q41	1530002850	S.TRANSISTOR	2SC4116-BL (TE85R)
Q51	1530002850	S.TRANSISTOR	2SC4116-BL (TE85R)
Q61	1530002850	S.TRANSISTOR	2SC4116-BL (TE85R)

S.=Surface mount

[DISPLAY BOARD]

REF NO.	ORDER NO.	DESCRIPTION	
Q71	1530002850	S.TRANSISTOR	2SC4116-BL (TE85R)
Q81	1530002850	S.TRANSISTOR	2SC4116-BL (TE85R)
R11	7030000320	S.RESISTOR	MCR10EZHJ 330 Ω (331)
R12	7030003360	S.RESISTOR	ERJ3GEYJ 221 V (220 Ω)
R21	7030000320	S.RESISTOR	MCR10EZHJ 330 Ω (331)
R22	7030003360	S.RESISTOR	ERJ3GEYJ 221 V (220 Ω)
R31	7030000320	S.RESISTOR	MCR10EZHJ 330 Ω (331)
R32	7030003360	S.RESISTOR	ERJ3GEYJ 221 V (220 Ω)
R41	7030000320	S.RESISTOR	MCR10EZHJ 330 Ω (331)
R42	7030003360	S.RESISTOR	ERJ3GEYJ 221 V (220 Ω)
R51	7030000320	S.RESISTOR	MCR10EZHJ 330 Ω (331)
R52	7030003360	S.RESISTOR	ERJ3GEYJ 221 V (220 Ω)
R61	7030000320	S.RESISTOR	MCR10EZHJ 330 Ω (331)
R62	7030003360	S.RESISTOR	ERJ3GEYJ 221 V (220 Ω)
R71	7030000320	S.RESISTOR	MCR10EZHJ 330 Ω (331)
R72	7030003360	S.RESISTOR	ERJ3GEYJ 221 V (220 Ω)
R81	7030000320	S.RESISTOR	MCR10EZHJ 330 Ω (331)
R82	7030003360	S.RESISTOR	ERJ3GEYJ 221 V (220 Ω)
C101	4030008630	S.CERAMIC	C1608 JF 1C 104Z-T-A
J101	6510019980	S.CONNECTOR	52808-1690
DS11	5040002510	S.LED	TLYE1002
DS12	5040002510	S.LED	TLYE1002
DS13	5040002510	S.LED	TLYE1002
DS21	5040002510	S.LED	TLYE1002
DS22	5040002510	S.LED	TLYE1002
DS23	5040002510	S.LED	TLYE1002
DS31	5040002510	S.LED	TLYE1002
DS32	5040002510	S.LED	TLYE1002
DS33	5040002510	S.LED	TLYE1002
DS41	5040002510	S.LED	TLYE1002
DS42	5040002510	S.LED	TLYE1002
DS43	5040002510	S.LED	TLYE1002
DS51	5040002510	S.LED	TLYE1002
DS52	5040002510	S.LED	TLYE1002
DS53	5040002510	S.LED	TLYE1002
DS61	5040002510	S.LED	TLYE1002
DS62	5040002510	S.LED	TLYE1002
DS63	5040002510	S.LED	TLYE1002
DS71	5040002510	S.LED	TLYE1002
DS72	5040002510	S.LED	TLYE1002
DS73	5040002510	S.LED	TLYE1002
DS81	5040002510	S.LED	TLYE1002
DS82	5040002510	S.LED	TLYE1002
DS83	5040002510	S.LED	TLYE1002
DS101	5030001690	LCD	HLC7395-012400
EP1	0910051372	PCB	B 5303B
EP2	8930049630	LCD CONTACT	SRCN-2240-SP-N-W

[MAIN UNIT]

REF NO.	ORDER NO.	DESCRIPTION	
IC391	1110003970	S.IC	µPC1658G-E1
IC551	1130007570	S.IC	BU4094BCFV-E2
IC552	1130007570	S.IC	BU4094BCFV-E2
IC561	1160000130	S.IC	TD62783AF (TP1)
IC562	1160000130	S.IC	TD62783AF (TP1)
IC731	1110003140	IC	LA1150N
IC811	1110002600	S.IC	MC1496 D
IC1001	1110003200	S.IC	TA31136FN (EL)
IC1101	1110002600	S.IC	MC1496 D
IC1201	1130009100	S.IC	BU4052BCFV-E2
IC1211	1110003870	S.IC	NJM2058M-T1
IC1251	1110003300	S.IC	M5282FP 70CD
IC1281	1130009100	S.IC	BU4052BCFV-E2
IC1291	1110003090	IC	LA4425A
IC1361	1180000970	S.IC	AN78L05M-(E1)

[MAIN UNIT]

REF NO.	ORDER NO.	DESCRIPTION	
IC1371	1180001530	IC	PQ30RV31
IC1391	1180001250	S.IC	TA7808F (TE16L)
IC1401	1180001070	S.IC	TA7805F (TE16L)
IC1411	1110001400	S.IC	µPC1555G2-T1
IC1601	1130007570	S.IC	BU4094BCFV-E2
IC1602	1130007570	S.IC	BU4094BCFV-E2
IC1603	1160000130	S.IC	TD62783AF (TP1)
IC1751	1120002510	S.IC	DS14C232TM
IC1771	1130005720	S.IC	TC7W04F (TE12L)
IC2001	1110004940	S.IC	MC13022ADWR3
Q151	1590000680	S.TRANSISTOR	DTC114EUA T106
Q381	1560000720	S.FET	2SK2171-4-TD
Q382	1560000720	S.FET	2SK2171-4-TD
Q383	1590001960	S.TRANSISTOR	XP4311 (TX)
Q391	1590001960	S.TRANSISTOR	XP4311 (TX)
Q411	1530003150	S.TRANSISTOR	2SC4673D-TD
Q441	1560000640	S.FET	2SK1740-TA
Q442	1560000640	S.FET	2SK1740-TA
Q471	1580000620	S.FET	3SK131-T2 MAS
Q472	1590001960	S.TRANSISTOR	XP4311 (TX)
Q721	1580000620	S.FET	3SK131-T2 MAS
Q731	1560000560	S.FET	2SK882-GR (TE85L)
Q732	1510000510	S.TRANSISTOR	2SA1576A T106R
Q733	1530002060	S.TRANSISTOR	2SC4081 T107 R
Q734	1530002060	S.TRANSISTOR	2SC4081 T107 R
Q735	1530002060	S.TRANSISTOR	2SC4081 T107 R
Q736	1590000680	S.TRANSISTOR	DTC114EUA T106
Q737	1590001960	S.TRANSISTOR	XP4311 (TX)
Q801	1530002060	S.TRANSISTOR	2SC4081 T107 R
Q891	1580000620	S.FET	3SK131-T2 MAS
Q911	1560000560	S.FET	2SK882-GR (TE85L)
Q912	1530002060	S.TRANSISTOR	2SC4081 T107 R
Q1001	1560000560	S.FET	2SK882-GR (TE85L)
Q1031	1530002060	S.TRANSISTOR	2SC4081 T107 R
Q1051	1530002060	S.TRANSISTOR	2SC4081 T107 R
Q1061	1590001960	S.TRANSISTOR	XP4311 (TX)
Q1063	1530002060	S.TRANSISTOR	2SC4081 T107 R
Q1064	1590001960	S.TRANSISTOR	XP4311 (TX)
Q1065	1590001960	S.TRANSISTOR	XP4311 (TX)
Q1066	1590001960	S.TRANSISTOR	XP4311 (TX)
Q1311	1530002060	S.TRANSISTOR	2SC4081 T107 R
Q1381	1540000550	S.TRANSISTOR	2SD1664 T100Q
Q1382	1590000680	S.TRANSISTOR	DTC114EUA T106
Q1771	1510000510	S.TRANSISTOR	2SA1576A T106R
Q1772	1530002060	S.TRANSISTOR	2SC4081 T107 R
Q2021	1590000680	S.TRANSISTOR	DTC114EUA T106
D141	1750000300	S.DIODE	1SS302 (TE85R)
D142	1750000300	S.DIODE	1SS302 (TE85R)
D151	1750000450	S.DIODE	1SV265-TL
D172	1790000620	S.DIODE	MA77 (TX)
D181	1750000450	S.DIODE	1SV265-TL
D182	1790000620	S.DIODE	MA77 (TX)
D202	1790000620	S.DIODE	MA77 (TX)
D221	1750000450	S.DIODE	1SV265-TL
D222	1790000620	S.DIODE	MA77 (TX)
D242	1790000620	S.DIODE	MA77 (TX)
D261	1750000450	S.DIODE	1SV265-TL
D262	1790000620	S.DIODE	MA77 (TX)
D282	1790000620	S.DIODE	MA77 (TX)
D301	1750000450	S.DIODE	1SV265-TL
D302	1790000620	S.DIODE	MA77 (TX)
D322	1790000620	S.DIODE	MA77 (TX)
D341	1750000440	S.DIODE	1SV263-TL
D342	1790000620	S.DIODE	MA77 (TX)
D371	1790000620	S.DIODE	MA77 (TX)
D372	1790000620	S.DIODE	MA77 (TX)
D381	1790000620	S.DIODE	MA77 (TX)
D382	1790000620	S.DIODE	MA77 (TX)
D391	1790000620	S.DIODE	MA77 (TX)
D392	1790000620	S.DIODE	MA77 (TX)
D491	1750000430	S.DIODE	HSB88WSTR
D711	1790000620	S.DIODE	MA77 (TX)
D712	1790000620	S.DIODE	MA77 (TX)
D713	1790000620	S.DIODE	MA77 (TX)
D714	1790000620	S.DIODE	MA77 (TX)
D731	1790001210	S.DIODE	1SS375-TL
D732	1750000550	S.DIODE	1SS355 TE-17
D761	1790000620	S.DIODE	MA77 (TX)

S.=Surface mount

[MAIN UNIT]

REF NO.	ORDER NO.	DESCRIPTION	
D762	1790000620	S.DIODE	MA77 (TX)
D763	1790000620	S.DIODE	MA77 (TX)
D764	1790000620	S.DIODE	MA77 (TX)
D771	1790000620	S.DIODE	MA77 (TX)
D772	1790000620	S.DIODE	MA77 (TX)
D773	1790000620	S.DIODE	MA77 (TX)
D774	1790000620	S.DIODE	MA77 (TX)
D781	1790000620	S.DIODE	MA77 (TX)
D782	1790000620	S.DIODE	MA77 (TX)
D783	1790000620	S.DIODE	MA77 (TX)
D784	1790000620	S.DIODE	MA77 (TX)
D831	1750000300	S.DIODE	1SS302 (TE85R)
D851	1790000620	S.DIODE	MA77 (TX)
D852	1790000620	S.DIODE	MA77 (TX)
D861	1790000620	S.DIODE	MA77 (TX)
D862	1790000620	S.DIODE	MA77 (TX)
D871	1790000620	S.DIODE	MA77 (TX)
D872	1790000620	S.DIODE	MA77 (TX)
D881	1790000620	S.DIODE	MA77 (TX)
D882	1790000620	S.DIODE	MA77 (TX)
D1051	1790001210	S.DIODE	1SS375-TL
D1061	1790001210	S.DIODE	1SS375-TL
D1311	1750000550	S.DIODE	1SS355 TE-17
D1351	1790000700	DIODE	DSA3A1
D1371	1750000550	S.DIODE	1SS355 TE-17
D1381	1750000300	S.DIODE	1SS302 (TE85R)
D1412	1750000300	S.DIODE	1SS302 (TE85R)
D1413	1730002320	S.ZENER	MA8051-M (TX)
D1771	1750000550	S.DIODE	1SS355 TE-17
FI461	2010002090	FILTER	FL-261 (69.0115 MHz)
FI701	2010000270	FILTER	9M15A (FL-23)
FI761	2010002130	D.FILTER	FL-272 (9.0115 MHz)
FI851	2020000210	CERAMIC	CFJ455K5 (FL-65)
FI861	2020001460	CERAMIC	CFWS450HT
FI871	2020001210	CERAMIC	CFWS450E
X1001	6070000200	DISCRIMINATOR	CDB450C24
X2021	6060000720	CERAMIC	CSA3.60MGF103
L101	6140002070	COIL	LR-233
L131	6200003430	S.COIL	NL 322522T-R10J
L132	6200003420	S.COIL	NL 322522T-R15J-3
L151	6200005490	S.COIL	NL 322522T-331J
L161	6200005490	S.COIL	NL 322522T-331J
L162	6200008790	S.COIL	ACL3225S-4R7K
L163	6200008800	S.COIL	ACL3225S-5R6K
L171	6200005490	S.COIL	NL 322522T-331J
L172	6200002960	S.COIL	NL 322522T-4R7J-3
L173	6200003110	S.COIL	NL 322522T-6R8J
L181	6200005490	S.COIL	NL 322522T-331J
L182	6200003090	S.COIL	NL 322522T-2R7J-3
L183	6200003100	S.COIL	NL 322522T-3R9J-3
L184	6200005490	S.COIL	NL 322522T-331J
L201	6200005490	S.COIL	NL 322522T-331J
L202	6200002990	S.COIL	NL 322522T-2R2J-3
L203	6200002990	S.COIL	NL 322522T-2R2J-3
L204	6200003320	S.COIL	NL 322522T-3R3J-3
L205	6200002960	S.COIL	NL 322522T-4R7J-3
L221	6200003240	S.COIL	NL 322522T-221J
L222	6200003080	S.COIL	NL 322522T-1R8J-3
L223	6200003060	S.COIL	NL 322522T-1R2J-3
L224	6200003070	S.COIL	NL 322522T-1R5J-3
L225	6200003070	S.COIL	NL 322522T-1R5J-3
L241	6200003240	S.COIL	NL 322522T-221J
L242	6200003060	S.COIL	NL 322522T-1R2J-3
L243	6200003330	S.COIL	NL 322522T-1R0J-3
L244	6200003330	S.COIL	NL 322522T-1R0J-3
L245	6200003080	S.COIL	NL 322522T-1R8J-3
L261	6200003240	S.COIL	NL 322522T-221J
L262	6200003250	S.COIL	NL 322522T-R39J-3
L263	6200002980	S.COIL	NL 322522T-R56J-3
L264	6200003040	S.COIL	NL 322522T-R68J-3
L265	6200003330	S.COIL	NL 322522T-1R0J-3
L281	6200001830	S.COIL	NL 322522T-100J
L282	6200003020	S.COIL	NL 322522T-R33J-3
L283	6200003250	S.COIL	NL 322522T-R39J-3
L284	6200003030	S.COIL	NL 322522T-R47J-3
L285	6200003030	S.COIL	NL 322522T-R47J-3

[MAIN UNIT]

REF NO.	ORDER NO.	DESCRIPTION	
L301	6200001830	S.COIL	NL 322522T-100J
L302	6200003020	S.COIL	NL 322522T-R33J-3
L303	6200003010	S.COIL	NL 322522T-R27J-3
L304	6200003020	S.COIL	NL 322522T-R33J-3
L305	6200003030	S.COIL	NL 322522T-R47J-3
L321	6200001830	S.COIL	NL 322522T-100J
L322	6200003000	S.COIL	NL 322522T-R22J-3
L323	6200003420	S.COIL	NL 322522T-R15J-3
L324	6180002960	S.COIL	NL 322522T-R18J-3
L325	6200003000	S.COIL	NL 322522T-R22J-3
L326	6200003000	S.COIL	NL 322522T-R22J-3
L341	6200001830	S.COIL	NL 322522T-100J
L342	6200001470	S.COIL	NL 322522T-R12J-3
L343	6200003420	S.COIL	NL 322522T-R15J-3
L345	6200003420	S.COIL	NL 322522T-R15J-3
L346	6200001470	S.COIL	NL 322522T-R12J-3
L361	6200005490	S.COIL	NL 322522T-331J
L362	6200005490	S.COIL	NL 322522T-331J
L371	6200003240	S.COIL	NL 322522T-221J
L381	6140000640	COIL	LR-86
L382	6200003070	S.COIL	NL 322522T-1R5J-3
L383	6140001500	COIL	LR-171
L384	6200005490	S.COIL	NL 322522T-331J
L385	6170000290	COIL	LW-30
L391	6200003240	S.COIL	NL 322522T-221J
L392	6200003240	S.COIL	NL 322522T-221J
L401	6200005490	S.COIL	NL 322522T-331J
L411	6200003000	S.COIL	NL 322522T-R22J-3
L412	6200003020	S.COIL	NL 322522T-R33J-3
L413	6200001830	S.COIL	NL 322522T-100J
L421	6200003430	S.COIL	NL 322522T-R10J
L422	6200003420	S.COIL	NL 322522T-R15J-3
L431	6200003430	S.COIL	NL 322522T-R10J
L432	6200003420	S.COIL	NL 322522T-R15J-3
L441	6140001500	COIL	LR-171
L442	6200003430	S.COIL	NL 322522T-R10J
L443	6150004270	COIL	LS-483A (C-14924)
L444	6200001830	S.COIL	NL 322522T-100J
L461	6150004270	COIL	LS-483A (C-14924)
L462	6150004270	COIL	LS-483A (C-14924)
L471	6150004280	COIL	LS-484B (C-14927)
L491	6140002810	S.COIL	LR-317
L492	6140002810	S.COIL	LR-317
L701	6150000711	COIL	LS-452
L711	6150000711	COIL	LS-452
L712	6150000711	COIL	LS-452
L721	6200001830	S.COIL	NL 322522T-100J
L731	6150004050	COIL	LS-466
L732	6150004050	COIL	LS-466
L733	6200003240	S.COIL	NL 322522T-221J
L891	6150002291	COIL	LS-450
L892	6150002291	COIL	LS-450
L911	6150002291	COIL	LS-450
L1001	6200003240	S.COIL	NL 322522T-221J
L1291	6170000140	COIL	LW-15
L1311	6200003240	S.COIL	NL 322522T-221J
L1321	6200003950	S.COIL	HF50ACC 322513-T
L1411	6200003240	S.COIL	NL 322522T-221J
L1412	6200005490	S.COIL	NL 322522T-331J
L1771	6200003240	S.COIL	NL 322522T-221J
L2011	6200005490	S.COIL	NL 322522T-331J
L2041	6200003240	S.COIL	NL 322522T-221J
R101	7030003640	S.RESISTOR	ERJ3GEYJ 473 V (47 kΩ)
R102	7540000090	ABSORBER	DSP-201M-S00B
R111	7030003640	S.RESISTOR	ERJ3GEYJ 473 V (47 kΩ)
R112	7540000090	ABSORBER	DSP-201M-S00B
R141	7030003480	S.RESISTOR	ERJ3GEYJ 222 V (2.2 kΩ)
R142	7030003400	S.RESISTOR	ERJ3GEYJ 471 V (470 Ω)
R143	7030003380	S.RESISTOR	ERJ3GEYJ 331 V (330 Ω)
R144	7030003300	S.RESISTOR	ERJ3GEYJ 680 V (68 Ω)
R151	7030006260	S.RESISTOR	ERJ12YJ471H (470 Ω)
R152	7030003560	S.RESISTOR	ERJ3GEYJ 103 V (10 kΩ)
R171	7030003370	S.RESISTOR	ERJ3GEYJ 271 V (270 Ω)
R172	7030003230	S.RESISTOR	ERJ3GEYJ 180 V (18 Ω)
R173	7030003370	S.RESISTOR	ERJ3GEYJ 271 V (270 Ω)
R174	7030003200	S.RESISTOR	ERJ3GEYJ 100 V (10 Ω)
R181	7030003320	S.RESISTOR	ERJ3GEYJ 101 V (100 Ω)
R201	7030003320	S.RESISTOR	ERJ3GEYJ 101 V (100 Ω)
R221	7030003320	S.RESISTOR	ERJ3GEYJ 101 V (100 Ω)
R241	7030003320	S.RESISTOR	ERJ3GEYJ 101 V (100 Ω)

S.=Surface mount

[MAIN UNIT]

REF NO.	ORDER NO.	DESCRIPTION	
R261	7030003320	S.RESISTOR	ERJ3GEYJ 101 V (100 Ω)
R281	7030003320	S.RESISTOR	ERJ3GEYJ 101 V (100 Ω)
R301	7030003320	S.RESISTOR	ERJ3GEYJ 101 V (100 Ω)
R321	7030003320	S.RESISTOR	ERJ3GEYJ 101 V (100 Ω)
R341	7030003320	S.RESISTOR	ERJ3GEYJ 101 V (100 Ω)
R361	7030006260	S.RESISTOR	ERJ12YJ471H (470 Ω)
R362	7030006260	S.RESISTOR	ERJ12YJ471H (470 Ω)
R371	7030003320	S.RESISTOR	ERJ3GEYJ 101 V (100 Ω)
R372	7030003320	S.RESISTOR	ERJ3GEYJ 101 V (100 Ω)
R381	7030003320	S.RESISTOR	ERJ3GEYJ 101 V (100 Ω)
R382	7030003280	S.RESISTOR	ERJ3GEYJ 470 V (47 Ω)
R383	7030003280	S.RESISTOR	ERJ3GEYJ 470 V (47 Ω)
R384	7030003320	S.RESISTOR	ERJ3GEYJ 101 V (100 Ω)
R385	7030003320	S.RESISTOR	ERJ3GEYJ 101 V (100 Ω)
R386	7030003320	S.RESISTOR	ERJ3GEYJ 101 V (100 Ω)
R391	7030003320	S.RESISTOR	ERJ3GEYJ 101 V (100 Ω)
R392	7030003400	S.RESISTOR	ERJ3GEYJ 471 V (470 Ω)
R393	7030003320	S.RESISTOR	ERJ3GEYJ 101 V (100 Ω)
R394	7030003370	S.RESISTOR	ERJ3GEYJ 271 V (270 Ω)
R395	7030003230	S.RESISTOR	ERJ3GEYJ 180 V (18 Ω)
R396	7030003370	S.RESISTOR	ERJ3GEYJ 271 V (270 Ω)
R401	7030006260	S.RESISTOR	ERJ12YJ471H (470 Ω)
R411	7030003300	S.RESISTOR	ERJ3GEYJ 680 V (68 Ω)
R412	7030003520	S.RESISTOR	ERJ3GEYJ 472 V (4.7 kΩ)
R413	7030003410	S.RESISTOR	ERJ3GEYJ 561 V (560 Ω)
R414	7030003200	S.RESISTOR	ERJ3GEYJ 100 V (10 Ω)
R415	7030003280	S.RESISTOR	ERJ3GEYJ 470 V (47 Ω)
R442	7030003410	S.RESISTOR	ERJ3GEYJ 561 V (560 Ω)
R443	7030003410	S.RESISTOR	ERJ3GEYJ 561 V (560 Ω)
R444	7310002720	S.TRIMMER	RV-148 (RH03A3AS3X0DA) 472
R445	7030003280	S.RESISTOR	ERJ3GEYJ 470 V (47 Ω)
R446	7030003560	S.RESISTOR	ERJ3GEYJ 103 V (10 kΩ)
R447	7030003280	S.RESISTOR	ERJ3GEYJ 470 V (47 Ω)
R448	7030003400	S.RESISTOR	ERJ3GEYJ 471 V (470 Ω)
R449	7030003320	S.RESISTOR	ERJ3GEYJ 101 V (100 Ω)
R471	7030003760	S.RESISTOR	ERJ3GEYJ 474 V (470 kΩ)
R472	7030003280	S.RESISTOR	ERJ3GEYJ 470 V (47 Ω)
R473	7030003200	S.RESISTOR	ERJ3GEYJ 100 V (10 Ω)
R474	7030003520	S.RESISTOR	ERJ3GEYJ 472 V (4.7 kΩ)
R475	7030003580	S.RESISTOR	ERJ3GEYJ 153 V (15 kΩ)
R476	7030003480	S.RESISTOR	ERJ3GEYJ 222 V (2.2 kΩ)
R477	7030003340	S.RESISTOR	ERJ3GEYJ 151 V (150 Ω)
R478	7030003480	S.RESISTOR	ERJ3GEYJ 222 V (2.2 kΩ)
R479	7030003280	S.RESISTOR	ERJ3GEYJ 470 V (47 Ω)
R491	7030003370	S.RESISTOR	ERJ3GEYJ 271 V (270 Ω)
R492	7030003230	S.RESISTOR	ERJ3GEYJ 180 V (18 Ω)
R493	7030003370	S.RESISTOR	ERJ3GEYJ 271 V (270 Ω)
R563	7030003640	S.RESISTOR	ERJ3GEYJ 473 V (47 kΩ)
R564	7030003640	S.RESISTOR	ERJ3GEYJ 473 V (47 kΩ)
R565	7030003640	S.RESISTOR	ERJ3GEYJ 473 V (47 kΩ)
R566	7030003640	S.RESISTOR	ERJ3GEYJ 473 V (47 kΩ)
R567	7030003640	S.RESISTOR	ERJ3GEYJ 473 V (47 kΩ)
R568	7030003640	S.RESISTOR	ERJ3GEYJ 473 V (47 kΩ)
R569	7030003640	S.RESISTOR	ERJ3GEYJ 473 V (47 kΩ)
R570	7030003640	S.RESISTOR	ERJ3GEYJ 473 V (47 kΩ)
R571	7030003200	S.RESISTOR	ERJ3GEYJ 100 V (10 Ω)
R572	7030003200	S.RESISTOR	ERJ3GEYJ 100 V (10 Ω)
R573	7030003200	S.RESISTOR	ERJ3GEYJ 100 V (10 Ω)
R574	7030003200	S.RESISTOR	ERJ3GEYJ 100 V (10 Ω)
R575	7030003200	S.RESISTOR	ERJ3GEYJ 100 V (10 Ω)
R576	7030003200	S.RESISTOR	ERJ3GEYJ 100 V (10 Ω)
R577	7030003200	S.RESISTOR	ERJ3GEYJ 100 V (10 Ω)
R578	7030003200	S.RESISTOR	ERJ3GEYJ 100 V (10 Ω)
R579	7030003640	S.RESISTOR	ERJ3GEYJ 473 V (47 kΩ)
R580	7030003640	S.RESISTOR	ERJ3GEYJ 473 V (47 kΩ)
R583	7030003640	S.RESISTOR	ERJ3GEYJ 473 V (47 kΩ)
R587	7030003200	S.RESISTOR	ERJ3GEYJ 100 V (10 Ω)
R588	7030003200	S.RESISTOR	ERJ3GEYJ 100 V (10 Ω)
R589	7030003200	S.RESISTOR	ERJ3GEYJ 100 V (10 Ω)
R590	7030003200	S.RESISTOR	ERJ3GEYJ 100 V (10 Ω)
R591	7030003200	S.RESISTOR	ERJ3GEYJ 100 V (10 Ω)
R592	7030003200	S.RESISTOR	ERJ3GEYJ 100 V (10 Ω)
R593	7030003200	S.RESISTOR	ERJ3GEYJ 100 V (10 Ω)
R711	7030003480	S.RESISTOR	ERJ3GEYJ 222 V (2.2 kΩ)
R712	7030003480	S.RESISTOR	ERJ3GEYJ 222 V (2.2 kΩ)
R713	7030003360	S.RESISTOR	ERJ3GEYJ 221 V (220 Ω)
R721	7030003520	S.RESISTOR	ERJ3GEYJ 472 V (4.7 kΩ)
R722	7030003610	S.RESISTOR	ERJ3GEYJ 273 V (27 kΩ)
R723	7030003760	S.RESISTOR	ERJ3GEYJ 474 V (470 kΩ)
R724	7030003340	S.RESISTOR	ERJ3GEYJ 151 V (150 Ω)
R725	7030003320	S.RESISTOR	ERJ3GEYJ 101 V (100 Ω)
R731	7030003680	S.RESISTOR	ERJ3GEYJ 104 V (100 kΩ)

[MAIN UNIT]

REF NO.	ORDER NO.	DESCRIPTION	
R732	7030003520	S.RESISTOR	ERJ3GEYJ 472 V (4.7 kΩ)
R733	7030003320	S.RESISTOR	ERJ3GEYJ 101 V (100 Ω)
R734	7030003320	S.RESISTOR	ERJ3GEYJ 101 V (100 Ω)
R735	7030003600	S.RESISTOR	ERJ3GEYJ 223 V (22 kΩ)
R736	7310002740	S.TRIMMER	RV-150 (RH03A3A14X0FC) 103
R737	7030003640	S.RESISTOR	ERJ3GEYJ 473 V (47 kΩ)
R738	7030003640	S.RESISTOR	ERJ3GEYJ 473 V (47 kΩ)
R739	7030003640	S.RESISTOR	ERJ3GEYJ 473 V (47 kΩ)
R740	7030003440	S.RESISTOR	ERJ3GEYJ 102 V (1 kΩ)
R741	7030003520	S.RESISTOR	ERJ3GEYJ 472 V (4.7 kΩ)
R742	7030003320	S.RESISTOR	ERJ3GEYJ 101 V (100 Ω)
R743	7030003640	S.RESISTOR	ERJ3GEYJ 473 V (47 kΩ)
R744	7030003520	S.RESISTOR	ERJ3GEYJ 472 V (4.7 kΩ)
R745	7030003680	S.RESISTOR	ERJ3GEYJ 104 V (100 kΩ)
R746	7030003540	S.RESISTOR	ERJ3GEYJ 682 V (6.8 kΩ)
R747	7030003440	S.RESISTOR	ERJ3GEYJ 102 V (1 kΩ)
R748	7030003400	S.RESISTOR	ERJ3GEYJ 471 V (470 Ω)
R749	7030003600	S.RESISTOR	ERJ3GEYJ 223 V (22 kΩ)
R750	7030003440	S.RESISTOR	ERJ3GEYJ 102 V (1 kΩ)
R751	7030003280	S.RESISTOR	ERJ3GEYJ 470 V (47 Ω)
R761	7030003480	S.RESISTOR	ERJ3GEYJ 222 V (2.2 kΩ)
R762	7030003360	S.RESISTOR	ERJ3GEYJ 221 V (220 Ω)
R763	7030003360	S.RESISTOR	ERJ3GEYJ 221 V (220 Ω)
R764	7030003480	S.RESISTOR	ERJ3GEYJ 222 V (2.2 kΩ)
R765	7030003560	S.RESISTOR	ERJ3GEYJ 103 V (10 kΩ)
R771	7030003480	S.RESISTOR	ERJ3GEYJ 222 V (2.2 kΩ)
R772	7030003360	S.RESISTOR	ERJ3GEYJ 221 V (220 Ω)
R773	7030003360	S.RESISTOR	ERJ3GEYJ 221 V (220 Ω)
R774	7030003480	S.RESISTOR	ERJ3GEYJ 222 V (2.2 kΩ)
R775	7030003560	S.RESISTOR	ERJ3GEYJ 103 V (10 kΩ)
R781	7030003480	S.RESISTOR	ERJ3GEYJ 222 V (2.2 kΩ)
R782	7030003360	S.RESISTOR	ERJ3GEYJ 221 V (220 Ω)
R783	7030003360	S.RESISTOR	ERJ3GEYJ 221 V (220 Ω)
R784	7030003480	S.RESISTOR	ERJ3GEYJ 222 V (2.2 kΩ)
R785	7030003560	S.RESISTOR	ERJ3GEYJ 103 V (10 kΩ)
R791	7030003480	S.RESISTOR	ERJ3GEYJ 222 V (2.2 kΩ)
R792	7030003520	S.RESISTOR	ERJ3GEYJ 472 V (4.7 kΩ)
R793	7030003480	S.RESISTOR	ERJ3GEYJ 222 V (2.2 kΩ)
R794	7030003480	S.RESISTOR	ERJ3GEYJ 222 V (2.2 kΩ)
R795	7030003520	S.RESISTOR	ERJ3GEYJ 472 V (4.7 kΩ)
R796	7030003480	S.RESISTOR	ERJ3GEYJ 222 V (2.2 kΩ)
R801	7030003440	S.RESISTOR	ERJ3GEYJ 102 V (1 kΩ)
R802	7030003320	S.RESISTOR	ERJ3GEYJ 101 V (100 Ω)
R811	7030003460	S.RESISTOR	ERJ3GEYJ 152 V (1.5 kΩ)
R812	7030003400	S.RESISTOR	ERJ3GEYJ 471 V (470 Ω)
R813	7030003400	S.RESISTOR	ERJ3GEYJ 471 V (470 Ω)
R814	7030003500	S.RESISTOR	ERJ3GEYJ 332 V (3.3 kΩ)
R815	7030003500	S.RESISTOR	ERJ3GEYJ 332 V (3.3 kΩ)
R816	7030003490	S.RESISTOR	ERJ3GEYJ 272 V (2.7 kΩ)
R817	7030003490	S.RESISTOR	ERJ3GEYJ 272 V (2.7 kΩ)
R818	7030003490	S.RESISTOR	ERJ3GEYJ 272 V (2.7 kΩ)
R819	7030003440	S.RESISTOR	ERJ3GEYJ 102 V (1 kΩ)
R820	7030003440	S.RESISTOR	ERJ3GEYJ 102 V (1 kΩ)
R821	7030003500	S.RESISTOR	ERJ3GEYJ 332 V (3.3 kΩ)
R822	7030003200	S.RESISTOR	ERJ3GEYJ 100 V (10 Ω)
R823	7030003200	S.RESISTOR	ERJ3GEYJ 100 V (10 Ω)
R824	7030003360	S.RESISTOR	ERJ3GEYJ 221 V (220 Ω)
R825	7510001270	S.THERMISTOR	NTCCM1608 3NH 681KC
R831	7030004710	S.RESISTOR	ERJ3GEYJ 475 V (4.7 MΩ)
R832	7030004710	S.RESISTOR	ERJ3GEYJ 475 V (4.7 MΩ)
R833	7030004710	S.RESISTOR	ERJ3GEYJ 475 V (4.7 MΩ)
R834	7030004710	S.RESISTOR	ERJ3GEYJ 475 V (4.7 MΩ)
R835	7030003820	S.RESISTOR	ERJ3GEYJ 155 V (1.5 MΩ)
R836	7030003520	S.RESISTOR	ERJ3GEYJ 472 V (4.7 kΩ)
R841	7030003560	S.RESISTOR	ERJ3GEYJ 103 V (10 kΩ)
R851	7030003560	S.RESISTOR	ERJ3GEYJ 103 V (10 kΩ)
R852	7030003360	S.RESISTOR	ERJ3GEYJ 221 V (220 Ω)
R853	7030003360	S.RESISTOR	ERJ3GEYJ 221 V (220 Ω)
R854	7030003560	S.RESISTOR	ERJ3GEYJ 103 V (10 kΩ)
R855	7030003560	S.RESISTOR	ERJ3GEYJ 103 V (10 kΩ)
R861	7030003560	S.RESISTOR	ERJ3GEYJ 103 V (10 kΩ)
R862	7030003360	S.RESISTOR	ERJ3GEYJ 221 V (220 Ω)
R863	7030003360	S.RESISTOR	ERJ3GEYJ 221 V (220 Ω)
R864	7030003560	S.RESISTOR	ERJ3GEYJ 103 V (10 kΩ)
R865	7030003560	S.RESISTOR	ERJ3GEYJ 103 V (10 kΩ)
R871	7030003510	S.RESISTOR	ERJ3GEYJ 392 V (3.9 kΩ)
R872	7030003360	S.RESISTOR	ERJ3GEYJ 221 V (220 Ω)
R873	7030003360	S.RESISTOR	ERJ3GEYJ 221 V (220 Ω)
R874	7030003510	S.RESISTOR	ERJ3GEYJ 392 V (3.9 kΩ)
R875	7030003560	S.RESISTOR	ERJ3GEYJ 103 V (10 kΩ)
R881	7030003510	S.RESISTOR	ERJ3GEYJ 392 V (3.9 kΩ)
R882	7030003360	S.RESISTOR	ERJ3GEYJ 221 V (220 Ω)

S.=Surface mount

[MAIN UNIT]

REF NO.	ORDER NO.	DESCRIPTION	
R883	7030003360	S.RESISTOR	ERJ3GEYJ 221 V (220 Ω)
R884	7030003510	S.RESISTOR	ERJ3GEYJ 392 V (3.9 kΩ)
R885	7030003560	S.RESISTOR	ERJ3GEYJ 103 V (10 kΩ)
R891	7030003560	S.RESISTOR	ERJ3GEYJ 103 V (10 kΩ)
R892	7030003320	S.RESISTOR	ERJ3GEYJ 101 V (100 Ω)
R893	7030003480	S.RESISTOR	ERJ3GEYJ 222 V (2.2 kΩ)
R894	7030003600	S.RESISTOR	ERJ3GEYJ 223 V (22 kΩ)
R895	7030003380	S.RESISTOR	ERJ3GEYJ 331 V (330 Ω)
R896	7030003500	S.RESISTOR	ERJ3GEYJ 332 V (3.3 kΩ)
R897	7030003320	S.RESISTOR	ERJ3GEYJ 101 V (100 Ω)
R898	7310002740	S.TRIMMER	RV-150 (RH03A3A14X0FC) 103
R911	7030003320	S.RESISTOR	ERJ3GEYJ 101 V (100 Ω)
R912	7030003480	S.RESISTOR	ERJ3GEYJ 222 V (2.2 kΩ)
R913	7030003320	S.RESISTOR	ERJ3GEYJ 101 V (100 Ω)
R914	7030003560	S.RESISTOR	ERJ3GEYJ 103 V (10 kΩ)
R915	7030003560	S.RESISTOR	ERJ3GEYJ 103 V (10 kΩ)
R1001	7030003520	S.RESISTOR	ERJ3GEYJ 472 V (4.7 kΩ)
R1002	7030003320	S.RESISTOR	ERJ3GEYJ 101 V (100 Ω)
R1003	7030003700	S.RESISTOR	ERJ3GEYJ 154 V (150 kΩ)
R1004	7030003500	S.RESISTOR	ERJ3GEYJ 332 V (3.3 kΩ)
R1005	7030003720	S.RESISTOR	ERJ3GEYJ 224 V (220 kΩ)
R1006	7030003460	S.RESISTOR	ERJ3GEYJ 152 V (1.5 kΩ)
R1007	7030003360	S.RESISTOR	ERJ3GEYJ 221 V (220 Ω)
R1008	7030003720	S.RESISTOR	ERJ3GEYJ 224 V (220 kΩ)
R1021	7030003560	S.RESISTOR	ERJ3GEYJ 103 V (10 kΩ)
R1022	7030003630	S.RESISTOR	ERJ3GEYJ 393 V (39 kΩ)
R1023	7030003660	S.RESISTOR	ERJ3GEYJ 683 V (68 kΩ)
R1024	7030003640	S.RESISTOR	ERJ3GEYJ 473 V (47 kΩ)
R1031	7030003360	S.RESISTOR	ERJ3GEYJ 221 V (220 Ω)
R1032	7030003720	S.RESISTOR	ERJ3GEYJ 224 V (220 kΩ)
R1033	7030003440	S.RESISTOR	ERJ3GEYJ 102 V (1 kΩ)
R1051	7030003490	S.RESISTOR	ERJ3GEYJ 272 V (2.7 kΩ)
R1052	7030003520	S.RESISTOR	ERJ3GEYJ 472 V (4.7 kΩ)
R1053	7030003400	S.RESISTOR	ERJ3GEYJ 471 V (470 Ω)
R1061	7030003680	S.RESISTOR	ERJ3GEYJ 104 V (100 kΩ)
R1062	7030003600	S.RESISTOR	ERJ3GEYJ 223 V (22 kΩ)
R1063	7030003440	S.RESISTOR	ERJ3GEYJ 102 V (1 kΩ)
R1064	7030003780	S.RESISTOR	ERJ3GEYJ 684 V (680 kΩ)
R1065	7030003520	S.RESISTOR	ERJ3GEYJ 472 V (4.7 kΩ)
R1066	7030003600	S.RESISTOR	ERJ3GEYJ 223 V (22 kΩ)
R1067	7030003740	S.RESISTOR	ERJ3GEYJ 334 V (330 kΩ)
R1068	7030003560	S.RESISTOR	ERJ3GEYJ 103 V (10 kΩ)
R1081	7030003360	S.RESISTOR	ERJ3GEYJ 221 V (220 Ω)
R1082	7030003440	S.RESISTOR	ERJ3GEYJ 102 V (1 kΩ)
R1084	7030003640	S.RESISTOR	ERJ3GEYJ 473 V (47 kΩ)
R1101	7030003440	S.RESISTOR	ERJ3GEYJ 102 V (1 kΩ)
R1102	7030003460	S.RESISTOR	ERJ3GEYJ 152 V (1.5 kΩ)
R1103	7030003440	S.RESISTOR	ERJ3GEYJ 102 V (1 kΩ)
R1104	7030003500	S.RESISTOR	ERJ3GEYJ 332 V (3.3 kΩ)
R1105	7030003480	S.RESISTOR	ERJ3GEYJ 222 V (2.2 kΩ)
R1106	7030003200	S.RESISTOR	ERJ3GEYJ 100 V (10 Ω)
R1107	7030003460	S.RESISTOR	ERJ3GEYJ 152 V (1.5 kΩ)
R1108	7030003440	S.RESISTOR	ERJ3GEYJ 102 V (1 kΩ)
R1109	7030003440	S.RESISTOR	ERJ3GEYJ 102 V (1 kΩ)
R1110	7030003480	S.RESISTOR	ERJ3GEYJ 222 V (2.2 kΩ)
R1111	7030003200	S.RESISTOR	ERJ3GEYJ 100 V (10 Ω)
R1201	7030003660	S.RESISTOR	ERJ3GEYJ 683 V (68 kΩ)
R1202	7030003480	S.RESISTOR	ERJ3GEYJ 222 V (2.2 kΩ)
R1204	7030003640	S.RESISTOR	ERJ3GEYJ 473 V (47 kΩ)
R1205	7030003640	S.RESISTOR	ERJ3GEYJ 473 V (47 kΩ)
R1211	7030003640	S.RESISTOR	ERJ3GEYJ 473 V (47 kΩ)
R1212	7030003630	S.RESISTOR	ERJ3GEYJ 393 V (39 kΩ)
R1213	7030003630	S.RESISTOR	ERJ3GEYJ 393 V (39 kΩ)
R1214	7030003630	S.RESISTOR	ERJ3GEYJ 393 V (39 kΩ)
R1215	7030003630	S.RESISTOR	ERJ3GEYJ 393 V (39 kΩ)
R1231	7030003400	S.RESISTOR	ERJ3GEYJ 471 V (470 Ω)
R1232	7030003400	S.RESISTOR	ERJ3GEYJ 471 V (470 Ω)
R1233	7030003400	S.RESISTOR	ERJ3GEYJ 471 V (470 Ω)
R1234	7030003400	S.RESISTOR	ERJ3GEYJ 471 V (470 Ω)
R1235	7030003400	S.RESISTOR	ERJ3GEYJ 471 V (470 Ω)
R1236	7030003400	S.RESISTOR	ERJ3GEYJ 471 V (470 Ω)
R1251	7030003680	S.RESISTOR	ERJ3GEYJ 104 V (100 kΩ)
R1252	7030003680	S.RESISTOR	ERJ3GEYJ 104 V (100 kΩ)
R1253	7030003680	S.RESISTOR	ERJ3GEYJ 104 V (100 kΩ)
R1254	7310002720	S.TRIMMER	RV-148 (RH03A3AS3X0DA) 472
R1255	7030003400	S.RESISTOR	ERJ3GEYJ 471 V (470 Ω)
R1256	7030003640	S.RESISTOR	ERJ3GEYJ 473 V (47 kΩ)
R1257	7030003560	S.RESISTOR	ERJ3GEYJ 103 V (10 kΩ)
R1258	7030003520	S.RESISTOR	ERJ3GEYJ 472 V (4.7 kΩ)
R1259	7030003520	S.RESISTOR	ERJ3GEYJ 472 V (4.7 kΩ)
R1260	7030003320	S.RESISTOR	ERJ3GEYJ 101 V (100 Ω)
R1261	7030003480	S.RESISTOR	ERJ3GEYJ 222 V (2.2 kΩ)

[MAIN UNIT]

REF NO.	ORDER NO.	DESCRIPTION	
R1262	7030003550	S.RESISTOR	ERJ3GEYJ 822 V (8.2 kΩ)
R1263	7030003610	S.RESISTOR	ERJ3GEYJ 273 V (27 kΩ)
R1271	7030003640	S.RESISTOR	ERJ3GEYJ 473 V (47 kΩ)
R1272	7030003440	S.RESISTOR	ERJ3GEYJ 102 V (1 kΩ)
R1281	7030003680	S.RESISTOR	ERJ3GEYJ 104 V (100 kΩ)
R1291	7030003550	S.RESISTOR	ERJ3GEYJ 822 V (8.2 kΩ)
R1292	7030003400	S.RESISTOR	ERJ3GEYJ 471 V (470 Ω)
R1293	7030003400	S.RESISTOR	ERJ3GEYJ 471 V (470 Ω)
R1311	7030003520	S.RESISTOR	ERJ3GEYJ 472 V (4.7 kΩ)
R1312	7030003620	S.RESISTOR	ERJ3GEYJ 333 V (33 kΩ)
R1313	7030003580	S.RESISTOR	ERJ3GEYJ 153 V (15 kΩ)
R1314	7030003640	S.RESISTOR	ERJ3GEYJ 473 V (47 kΩ)
R1351	7030003200	S.RESISTOR	ERJ3GEYJ 100 V (10 Ω)
R1371	7030003520	S.RESISTOR	ERJ3GEYJ 472 V (4.7 kΩ)
R1372	7030003640	S.RESISTOR	ERJ3GEYJ 473 V (47 kΩ)
R1374	7030003520	S.RESISTOR	ERJ3GEYJ 472 V (4.7 kΩ)
R1381	7030003280	S.RESISTOR	ERJ3GEYJ 470 V (47 Ω)
R1382	7030003480	S.RESISTOR	ERJ3GEYJ 222 V (2.2 kΩ)
R1401	7070001060	RESISTOR	ERG2SJ 120
R1411	7030003320	S.RESISTOR	ERJ3GEYJ 101 V (100 Ω)
R1412	7030003560	S.RESISTOR	ERJ3GEYJ 103 V (10 kΩ)
R1413	7030003680	S.RESISTOR	ERJ3GEYJ 104 V (100 kΩ)
R1414	7030003320	S.RESISTOR	ERJ3GEYJ 101 V (100 Ω)
R1415	7030003320	S.RESISTOR	ERJ3GEYJ 101 V (100 Ω)
R1416	7030003320	S.RESISTOR	ERJ3GEYJ 101 V (100 Ω)
R1771	7030003540	S.RESISTOR	ERJ3GEYJ 682 V (6.8 kΩ)
R1772	7030003620	S.RESISTOR	ERJ3GEYJ 333 V (33 kΩ)
R1773	7030003640	S.RESISTOR	ERJ3GEYJ 473 V (47 kΩ)
R1774	7030003580	S.RESISTOR	ERJ3GEYJ 153 V (15 kΩ)
R2001	7030003560	S.RESISTOR	ERJ3GEYJ 103 V (10 kΩ)
R2002	7030003360	S.RESISTOR	ERJ3GEYJ 221 V (220 Ω)
R2011	7030003560	S.RESISTOR	ERJ3GEYJ 103 V (10 kΩ)
R2012	7030003680	S.RESISTOR	ERJ3GEYJ 104 V (100 kΩ)
R2021	7030003510	S.RESISTOR	ERJ3GEYJ 392 V (3.9 kΩ)
R2022	7030003440	S.RESISTOR	ERJ3GEYJ 102 V (1 kΩ)
R2031	7030003640	S.RESISTOR	ERJ3GEYJ 473 V (47 kΩ)
R2032	7030003640	S.RESISTOR	ERJ3GEYJ 473 V (47 kΩ)
R2051	7030003640	S.RESISTOR	ERJ3GEYJ 473 V (47 kΩ)
C101	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C111	4030010210	S.CERAMIC	C3216 JB 1C 105M-T-A
C121	4030006900	S.CERAMIC	C1608 JB 1E 103K-T-A
C131	4030007070	S.CERAMIC	C1608 CH 1H 330J-T-A
C132	4030007070	S.CERAMIC	C1608 CH 1H 330J-T-A
C133	4030007040	S.CERAMIC	C1608 CH 1H 180J-T-A
C134	4030007120	S.CERAMIC	C1608 CH 1H 820J-T-A
C135	4030007040	S.CERAMIC	C1608 CH 1H 180J-T-A
C136	4030007100	S.CERAMIC	C1608 CH 1H 560J-T-A
C141	4030006900	S.CERAMIC	C1608 JB 1E 103K-T-A
C151	4030010210	S.CERAMIC	C3216 JB 1C 105M-T-A
C152	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C161	4030008470	S.CERAMIC	C1608 JB 1H 272K-T-A
C162	4030009880	S.CERAMIC	C1608 JB 1H 682K-T-A
C163	4030009980	S.CERAMIC	C1608 JB 1H 152K-T-A
C164	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C170	4510004640	S.ELECTROLYTIC	ECEV1CA470SP
C171	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C172	4030008650	S.CERAMIC	C1608 JB 1H 332K-T-A
C173	4030010240	S.CERAMIC	C1608 JB 1H 391K-T-A
C174	4030008650	S.CERAMIC	C1608 JB 1H 332K-T-A
C175	4030010210	S.CERAMIC	C3216 JB 1C 105M-T-A
C176	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C181	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C182	4030006860	S.CERAMIC	C1608 JB 1H 102K-T-A
C183	4030009580	S.CERAMIC	C1608 JB 1H 681K-T-A
C184	4030006870	S.CERAMIC	C1608 JB 1H 222K-T-A
C185	4030007170	S.CERAMIC	C1608 CH 1H 221J-T-A
C186	4030010020	S.CERAMIC	C1608 JB 1H 122K-T-A
C187	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C188	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C201	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C202	4030010020	S.CERAMIC	C1608 JB 1H 122K-T-A
C203	4030007130	S.CERAMIC	C1608 CH 1H 101J-T-A
C204	4030010020	S.CERAMIC	C1608 JB 1H 122K-T-A
C205	4030009880	S.CERAMIC	C1608 JB 1H 682K-T-A
C206	4030009880	S.CERAMIC	C1608 JB 1H 682K-T-A
C207	4030009980	S.CERAMIC	C1608 JB 1H 152K-T-A
C208	4030009980	S.CERAMIC	C1608 JB 1H 152K-T-A
C209	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C221	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C222	4030010240	S.CERAMIC	C1608 JB 1H 391K-T-A

S.=Surface mount

[MAIN UNIT]

REF NO.	ORDER NO.	DESCRIPTION	
C223	4030007140	S.CERAMIC	C1608 CH 1H 121J-T-A
C224	4030007130	S.CERAMIC	C1608 CH 1H 101J-T-A
C225	4030006850	S.CERAMIC	C1608 JB 1H 471K-T-A
C226	4030006870	S.CERAMIC	C1608 JB 1H 222K-T-A
C227	4030006880	S.CERAMIC	C1608 JB 1H 472K-T-A
C228	4030006860	S.CERAMIC	C1608 JB 1H 102K-T-A
C229	4030009580	S.CERAMIC	C1608 JB 1H 681K-T-A
C230	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C241	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C242	4030010760	S.CERAMIC	C1608 CH 1H 331J-T-A
C243	4030007090	S.CERAMIC	C1608 CH 1H 470J-T-A
C244	4030007160	S.CERAMIC	C1608 CH 1H 181J-T-A
C245	4030010040	S.CERAMIC	C1608 JB 1H 561K-T-A
C246	4030008470	S.CERAMIC	C1608 JB 1H 272K-T-A
C247	4030010760	S.CERAMIC	C1608 CH 1H 331J-T-A
C248	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C261	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C262	4030011280	S.CERAMIC	C1608 CH 1H 271J-T-A
C263	4030007090	S.CERAMIC	C1608 CH 1H 470J-T-A
C264	4030007150	S.CERAMIC	C1608 CH 1H 151J-T-A
C265	4030006850	S.CERAMIC	C1608 JB 1H 471K-T-A
C266	4030010020	S.CERAMIC	C1608 JB 1H 122K-T-A
C267	4030007140	S.CERAMIC	C1608 CH 1H 121J-T-A
C268	4030007140	S.CERAMIC	C1608 CH 1H 121J-T-A
C269	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C281	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C282	4030007160	S.CERAMIC	C1608 CH 1H 181J-T-A
C283	4030007030	S.CERAMIC	C1608 CH 1H 150J-T-A
C284	4030007030	S.CERAMIC	C1608 CH 1H 150J-T-A
C285	4030007130	S.CERAMIC	C1608 CH 1H 101J-T-A
C286	4030007150	S.CERAMIC	C1608 CH 1H 151J-T-A
C287	4030007150	S.CERAMIC	C1608 CH 1H 151J-T-A
C288	4030010020	S.CERAMIC	C1608 JB 1H 122K-T-A
C289	4030007150	S.CERAMIC	C1608 CH 1H 151J-T-A
C290	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C301	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C302	4030006990	S.CERAMIC	C1608 CH 1H 080D-T-A
C303	4030007160	S.CERAMIC	C1608 CH 1H 181J-T-A
C304	4030007060	S.CERAMIC	C1608 CH 1H 270J-T-A
C305	4030007140	S.CERAMIC	C1608 CH 1H 121J-T-A
C306	4030007160	S.CERAMIC	C1608 CH 1H 181J-T-A
C307	4030010020	S.CERAMIC	C1608 JB 1H 122K-T-A
C308	4030007130	S.CERAMIC	C1608 CH 1H 101J-T-A
C309	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C321	4030006900	S.CERAMIC	C1608 JB 1E 103K-T-A
C322	4030007110	S.CERAMIC	C1608 CH 1H 680J-T-A
C323	4030007080	S.CERAMIC	C1608 CH 1H 390J-T-A
C324	4030007110	S.CERAMIC	C1608 CH 1H 680J-T-A
C325	4030007010	S.CERAMIC	C1608 CH 1H 100D-T-A
C326	4030007010	S.CERAMIC	C1608 CH 1H 100D-T-A
C327	4030007110	S.CERAMIC	C1608 CH 1H 680J-T-A
C328	4030007170	S.CERAMIC	C1608 CH 1H 221J-T-A
C329	4030010240	S.CERAMIC	C1608 JB 1H 391K-T-A
C330	4030007100	S.CERAMIC	C1608 CH 1H 560J-T-A
C331	4030007050	S.CERAMIC	C1608 CH 1H 220J-T-A
C332	4030006900	S.CERAMIC	C1608 JB 1E 103K-T-A
C333	4030007070	S.CERAMIC	C1608 CH 1H 330J-T-A
C341	4030006900	S.CERAMIC	C1608 JB 1E 103K-T-A
C342	4030007110	S.CERAMIC	C1608 CH 1H 680J-T-A
C344	4030007020	S.CERAMIC	C1608 CH 1H 120J-T-A
C345	4030007080	S.CERAMIC	C1608 CH 1H 390J-T-A
C346	4030006900	S.CERAMIC	C1608 JB 1E 103K-T-A
C349	4030007100	S.CERAMIC	C1608 CH 1H 560J-T-A
C350	4030007160	S.CERAMIC	C1608 CH 1H 181J-T-A
C351	4030007090	S.CERAMIC	C1608 CH 1H 470J-T-A
C352	4030006900	S.CERAMIC	C1608 JB 1E 103K-T-A
C361	4030010210	S.CERAMIC	C3216 JB 1C 105M-T-A
C371	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C372	4030007010	S.CERAMIC	C1608 CH 1H 100D-T-A
C381	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C382	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C383	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C384	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C385	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C386	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C391	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C392	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C393	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C394	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C395	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C396	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C397	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N

[MAIN UNIT]

REF NO.	ORDER NO.	DESCRIPTION	
C401	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C411	4030007080	S.CERAMIC	C1608 CH 1H 390J-T-A
C412	4030007130	S.CERAMIC	C1608 CH 1H 101J-T-A
C413	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C414	4030006860	S.CERAMIC	C1608 JB 1H 102K-T-A
C415	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C422	4030006970	S.CERAMIC	C1608 CH 1H 060D-T-A
C423	4030007040	S.CERAMIC	C1608 CH 1H 180J-T-A
C424	4030006920	S.CERAMIC	C1608 CH 1H 010C-T-A
C425	4030007040	S.CERAMIC	C1608 CH 1H 180J-T-A
C431	4030007070	S.CERAMIC	C1608 CH 1H 330J-T-A
C432	4030007070	S.CERAMIC	C1608 CH 1H 330J-T-A
C433	4030007040	S.CERAMIC	C1608 CH 1H 180J-T-A
C434	4030007120	S.CERAMIC	C1608 CH 1H 820J-T-A
C435	4030007040	S.CERAMIC	C1608 CH 1H 180J-T-A
C436	4030007100	S.CERAMIC	C1608 CH 1H 560J-T-A
C442	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C443	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C444	4030006990	S.CERAMIC	C1608 CH 1H 080D-T-A
C445	4030006950	S.CERAMIC	C1608 CH 1H 040C-T-A
C446	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C447	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C448	4030007130	S.CERAMIC	C1608 CH 1H 101J-T-A
C461	4030006980	S.CERAMIC	C1608 CH 1H 070D-T-A
C462	4030006930	S.CERAMIC	C1608 CH 1H 020C-T-A
C471	4030007050	S.CERAMIC	C1608 CH 1H 220J-T-A
C472	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C473	4030006880	S.CERAMIC	C1608 JB 1H 472K-T-A
C474	4030006880	S.CERAMIC	C1608 JB 1H 472K-T-A
C475	4030007020	S.CERAMIC	C1608 CH 1H 120J-T-A
C476	4030006880	S.CERAMIC	C1608 JB 1H 472K-T-A
C492	4030007110	S.CERAMIC	C1608 CH 1H 680J-T-A
C551	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C552	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C561	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C562	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C701	4030006930	S.CERAMIC	C1608 CH 1H 020C-T-A
C711	4030006880	S.CERAMIC	C1608 JB 1H 472K-T-A
C712	4030006880	S.CERAMIC	C1608 JB 1H 472K-T-A
C721	4030006880	S.CERAMIC	C1608 JB 1H 472K-T-A
C722	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C723	4030006880	S.CERAMIC	C1608 JB 1H 472K-T-A
C724	4030007050	S.CERAMIC	C1608 CH 1H 220J-T-A
C725	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C726	4030006880	S.CERAMIC	C1608 JB 1H 472K-T-A
C731	4030006880	S.CERAMIC	C1608 JB 1H 472K-T-A
C732	4030006880	S.CERAMIC	C1608 JB 1H 472K-T-A
C733	4030006880	S.CERAMIC	C1608 JB 1H 472K-T-A
C734	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C735	4030006880	S.CERAMIC	C1608 JB 1H 472K-T-A
C736	4030006880	S.CERAMIC	C1608 JB 1H 472K-T-A
C737	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C738	4030007150	S.CERAMIC	C1608 CH 1H 151J-T-A
C739	4510004430	S.ELECTROLYTIC	ECEV1CV220WR
C740	4030007050	S.CERAMIC	C1608 CH 1H 220J-T-A
C741	4510004640	S.ELECTROLYTIC	ECEV1CA470SP
C742	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C743	4510004630	S.ELECTROLYTIC	ECEV1CA100SR
C761	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C762	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C771	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C772	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C773	4030007030	S.CERAMIC	C1608 CH 1H 150J-T-A
C781	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C782	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C791	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C792	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C801	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C811	4030006880	S.CERAMIC	C1608 JB 1H 472K-T-A
C813	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C814	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C816	4030006880	S.CERAMIC	C1608 JB 1H 472K-T-A
C818	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C831	4030008650	S.CERAMIC	C1608 JB 1H 332K-T-A
C841	4030006880	S.CERAMIC	C1608 JB 1H 472K-T-A
C851	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C852	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C861	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C862	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C871	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C872	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C881	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N

S.=Surface mount

[MAIN UNIT]

REF NO.	ORDER NO.	DESCRIPTION	
C882	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C891	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C892	4030006880	S.CERAMIC	C1608 JB 1H 472K-T-A
C893	4030006880	S.CERAMIC	C1608 JB 1H 472K-T-A
C894	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C895	4030007050	S.CERAMIC	C1608 CH 1H 220J-T-A
C896	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C897	4030006880	S.CERAMIC	C1608 JB 1H 472K-T-A
C911	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C912	4030007170	S.CERAMIC	C1608 CH 1H 221J-T-A
C913	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C914	4510005860	S.ELECTROLYTIC	ECEV1HA2R2SR
C1001	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C1002	4030006880	S.CERAMIC	C1608 JB 1H 472K-T-A
C1003	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C1004	4030007170	S.CERAMIC	C1608 CH 1H 221J-T-A
C1005	4030007170	S.CERAMIC	C1608 CH 1H 221J-T-A
C1006	4030006880	S.CERAMIC	C1608 JB 1H 472K-T-A
C1007	4030007130	S.CERAMIC	C1608 CH 1H 101J-T-A
C1008	4510004630	S.ELECTROLYTIC	ECEV1CA100SR
C1009	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C1010	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C1021	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C1022	4030006900	S.CERAMIC	C1608 JB 1E 103K-T-A
C1023	4030006900	S.CERAMIC	C1608 JB 1E 103K-T-A
C1024	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C1031	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C1051	4510004630	S.ELECTROLYTIC	ECEV1CA100SR
C1061	4030006880	S.CERAMIC	C1608 JB 1H 472K-T-A
C1062	4030007130	S.CERAMIC	C1608 CH 1H 101J-T-A
C1063	4510004630	S.ELECTROLYTIC	ECEV1CA100SR
C1064	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C1065	4510004630	S.ELECTROLYTIC	ECEV1CA100SR
C1066	4510005860	S.ELECTROLYTIC	ECEV1HA2R2SR
C1067	4510004430	S.ELECTROLYTIC	ECEV1CV220WR
C1081	4030006880	S.CERAMIC	C1608 JB 1H 472K-T-A
C1085	4030006880	S.CERAMIC	C1608 JB 1H 472K-T-A
C1089	4030006880	S.CERAMIC	C1608 JB 1H 472K-T-A
C1090	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C1101	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C1102	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C1103	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C1201	4030006900	S.CERAMIC	C1608 JB 1E 103K-T-A
C1202	4030006900	S.CERAMIC	C1608 JB 1E 103K-T-A
C1211	4030009980	S.CERAMIC	C1608 JB 1H 152K-T-A
C1212	4030010020	S.CERAMIC	C1608 JB 1H 122K-T-A
C1213	4030008650	S.CERAMIC	C1608 JB 1H 332K-T-A
C1214	4030010040	S.CERAMIC	C1608 JB 1H 561K-T-A
C1215	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C1216	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C1217	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C1231	4030006880	S.CERAMIC	C1608 JB 1H 472K-T-A
C1251	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C1253	4030010760	S.CERAMIC	C1608 CH 1H 331J-T-A
C1254	4510005860	S.ELECTROLYTIC	ECEV1HA2R2SR
C1255	4030006900	S.CERAMIC	C1608 JB 1E 103K-T-A
C1256	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C1257	4510004630	S.ELECTROLYTIC	ECEV1CA100SR
C1258	4510004630	S.ELECTROLYTIC	ECEV1CA100SR
C1259	4510004630	S.ELECTROLYTIC	ECEV1CA100SR
C1260	4510004630	S.ELECTROLYTIC	ECEV1CA100SR
C1261	4510004630	S.ELECTROLYTIC	ECEV1CA100SR
C1262	4510005860	S.ELECTROLYTIC	ECEV1HA2R2SR
C1271	4030006880	S.CERAMIC	C1608 JB 1H 472K-T-A
C1272	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C1281	4030006900	S.CERAMIC	C1608 JB 1E 103K-T-A
C1282	4030006900	S.CERAMIC	C1608 JB 1E 103K-T-A
C1292	4510004630	S.ELECTROLYTIC	ECEV1CA100SR
C1293	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C1294	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C1295	4510004590	ELECTROLYTIC	16 MV 470 HC
C1296	4510004590	ELECTROLYTIC	16 MV 470 HC
C1311	4030006900	S.CERAMIC	C1608 JB 1E 103K-T-A
C1312	4030006900	S.CERAMIC	C1608 JB 1E 103K-T-A
C1321	4030006900	S.CERAMIC	C1608 JB 1E 103K-T-A
C1351	4030006900	S.CERAMIC	C1608 JB 1E 103K-T-A
C1352	4030006900	S.CERAMIC	C1608 JB 1E 103K-T-A
C1353	4510004510	ELECTROLYTIC	25 MV 470 HC
C1361	4510005860	S.ELECTROLYTIC	ECEV1HA2R2SR
C1362	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C1363	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C1364	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N

[MAIN UNIT]

REF NO.	ORDER NO.	DESCRIPTION	
C1365	4510004630	S.ELECTROLYTIC	ECEV1CA100SR
C1371	4510005860	S.ELECTROLYTIC	ECEV1HA2R2SR
C1372	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C1373	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C1374	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C1375	4510004590	ELECTROLYTIC	16 MV 470 HC
C1376	4030010210	S.CERAMIC	C3216 JB 1C 105M-T-A
C1381	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C1382	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C1391	4510004590	ELECTROLYTIC	16 MV 470 HC
C1392	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C1393	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C1394	4510004630	S.ELECTROLYTIC	ECEV1CA100SR
C1401	4510004630	S.ELECTROLYTIC	ECEV1CA100SR
C1402	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C1403	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C1404	4510004630	S.ELECTROLYTIC	ECEV1CA100SR
C1411	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C1412	4510004640	S.ELECTROLYTIC	ECEV1CA470SP
C1413	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C1414	4510004430	S.ELECTROLYTIC	ECEV1CV220WR
C1415	4030006860	S.CERAMIC	C1608 JB 1H 102K-T-A
C1416	4030006900	S.CERAMIC	C1608 JB 1E 103K-T-A
C1417	4510004640	S.ELECTROLYTIC	ECEV1CA470SP
C1418	4510004640	S.ELECTROLYTIC	ECEV1CA470SP
C1419	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C1420	4510004630	S.ELECTROLYTIC	ECEV1CA100SR
C1421	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C1422	4510004640	S.ELECTROLYTIC	ECEV1CA470SP
C1502	4030006880	S.CERAMIC	C1608 JB 1H 472K-T-A
C1521	4030006880	S.CERAMIC	C1608 JB 1H 472K-T-A
C1601	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C1602	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C1603	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C1751	4510004630	S.ELECTROLYTIC	ECEV1CA100SR
C1752	4510004630	S.ELECTROLYTIC	ECEV1CA100SR
C1753	4510004630	S.ELECTROLYTIC	ECEV1CA100SR
C1754	4510004630	S.ELECTROLYTIC	ECEV1CA100SR
C1755	4510004630	S.ELECTROLYTIC	ECEV1CA100SR
C1756	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C1771	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C2001	4030006860	S.CERAMIC	C1608 JB 1H 102K-T-A
C2011	4030010760	S.CERAMIC	C1608 CH 1H 331J-T-A
C2012	4030007070	S.CERAMIC	C1608 CH 1H 330J-T-A
C2013	4510004630	S.ELECTROLYTIC	ECEV1CA100SR
C2014	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C2015	4030006900	S.CERAMIC	C1608 JB 1E 103K-T-A
C2016	4510004630	S.ELECTROLYTIC	ECEV1CA100SR
C2021	4030006860	S.CERAMIC	C1608 JB 1H 102K-T-A
C2022	4030007080	S.CERAMIC	C1608 CH 1H 390J-T-A
C2023	4030007020	S.CERAMIC	C1608 CH 1H 120J-T-A
C2024	4510004640	S.ELECTROLYTIC	ECEV1CA470SP
C2031	4030006860	S.CERAMIC	C1608 JB 1H 102K-T-A
C2032	4030006860	S.CERAMIC	C1608 JB 1H 102K-T-A
C2033	4030006860	S.CERAMIC	C1608 JB 1H 102K-T-A
C2034	4030006860	S.CERAMIC	C1608 JB 1H 102K-T-A
C2035	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C2036	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C2041	4510004630	S.ELECTROLYTIC	ECEV1CA100SR
C2042	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C2051	4510005860	S.ELECTROLYTIC	ECEV1HA2R2SR
RL121	6330000180	RELAY	MZ-12HG
RL141	6330000180	RELAY	MZ-12HG
CP731	6910009670	S.CHECK P	HK3-S-T
J101	6510021460	CONNECTOR	PT-C02P01
J111	6510007020	CONNECTOR	TMP-J01X-V6
J411	6510007020	CONNECTOR	TMP-J01X-V6
J491	6510007020	CONNECTOR	TMP-J01X-V6
J781	6450001560	CONNECTOR	PD-72
J782	6450001560	CONNECTOR	PD-72
J783	6450001560	CONNECTOR	PD-72
J784	6450001560	CONNECTOR	PD-72
J811	6510007020	CONNECTOR	TMP-J01X-V6
J881	6450001560	CONNECTOR	PD-72
J882	6450001560	CONNECTOR	PD-72
J883	6450001560	CONNECTOR	PD-72

S.=Surface mount

[MAIN UNIT]

REF NO.	ORDER NO.	DESCRIPTION	
J884	6450001560	CONNECTOR	PD-72
J1081	6510007020	CONNECTOR	TMP-J01X-V6
J1221	6510018970	S.CONNECTOR	B4B-PH-SM3-TB
J1231	6510019970	S.CONNECTOR	52808-1090
J1271	6510019190	S.CONNECTOR	52365-0891
J1311	6450001800	CONNECT	JPJ1044-01-010
J1321	6450000140	CONNECTOR	HSJ0807-01-010
J1351	6450001700	CONNECTOR	HEC0740-010010
J1501	6510019980	S.CONNECTOR	52808-1690
J1521	6510019980	S.CONNECTOR	52808-1690
J1522	6510008370	CONNECTOR	BBH-1
J1541	6510019980	S.CONNECTOR	52808-1690
J1561	6510019980	S.CONNECTOR	52808-1690
J1701	6450000140	CONNECTOR	HSJ0807-01-010
J1751	6510021240	CONNECTOR	DELC-J9SAF-23L9
F1351	5210000050	FUSE	FGB 3A
F1352	5220000230	HOLDER	S-N5054 #01
F1353	5220000230	HOLDER	S-N5054 #01
BT1521	3020000110	LITHIUM	CR2032
WS1	8600036540	CABLE	RX2240 P1241*J1241MA
EP1	0910051114	PCB	B 5273D

[PLL UNIT]

REF NO.	ORDER NO.	DESCRIPTION	
IC21	1140003641	S.IC	SC-1246
IC22	1110004460	S.IC	µPB1509GV-E1
IC23	1130003830	S.IC	TC7S04F (TE85R)
IC151	1140004550	S.IC	M65343FP/SC1287
IC201	1140004550	S.IC	M65343FP/SC1287
Q1	1530002570	S.TRANSISTOR	2SC4405-3-TL
Q2	1530002570	S.TRANSISTOR	2SC4405-3-TL
Q3	1590000680	S.TRANSISTOR	DTC114EUA T106
Q4	1590000680	S.TRANSISTOR	DTC114EUA T106
Q21	1530003000	S.TRANSISTOR	2SC4117-BL (TE85R)
Q71	1560000490	S.FET	2SK508 K52 T2B
Q72	1590000680	S.TRANSISTOR	DTC114EUA T106
Q81	1560000490	S.FET	2SK508 K52 T2B
Q82	1590000680	S.TRANSISTOR	DTC114EUA T106
Q91	1530002570	S.TRANSISTOR	2SC4405-3-TL
Q92	1590001330	S.TRANSISTOR	DTA114EUA T106
Q93	1590000680	S.TRANSISTOR	DTC114EUA T106
Q96	1530003000	S.TRANSISTOR	2SC4117-BL (TE85R)
Q97	1530003000	S.TRANSISTOR	2SC4117-BL (TE85R)
Q151	1530003000	S.TRANSISTOR	2SC4117-BL (TE85R)
Q201	1530003000	S.TRANSISTOR	2SC4117-BL (TE85R)
D1	1750000520	S.DIODE	DAN222TL
D2	1750000550	S.DIODE	1SS355 TE-17
D71	1720000390	S.VARICAP	KV1470TL
D72	1790000620	S.DIODE	MA77 (TX)
D81	1720000390	S.VARICAP	KV1470TL
D82	1790000620	S.DIODE	MA77 (TX)
D91	1790000620	S.DIODE	MA77 (TX)
D92	1790000620	S.DIODE	MA77 (TX)
D93	1790001640	S.DIODE	1SS373 (TPH3)
D94	1790001640	S.DIODE	1SS373 (TPH3)
X1	6050005711	XTAL	CR-275A (30.00000 MHz)
L1	6170000230	COIL	LW-25
L2	6150004370	COIL	LS-472C (C-15045)
L3	6200003950	S.COIL	HF50ACC 322513-T
L4	6150004250	COIL	LS-471A (C-14922)

[PLL UNIT]

REF NO.	ORDER NO.	DESCRIPTION	
L5	6150004250	COIL	LS-471A (C-14922)
L22	6200003170	S.COIL	NL 322522T-330J
L23	6200003180	S.COIL	NL 322522T-390J
L24	6200003180	S.COIL	NL 322522T-390J
L25	6200001830	S.COIL	NL 322522T-100J
L26	6200003190	S.COIL	NL 322522T-470J
L27	6200003190	S.COIL	NL 322522T-470J
L71	6170000230	COIL	LW-25
L72	6190001370	COIL	E544GN-110254
L73	6170000230	COIL	LW-25
L81	6170000230	COIL	LW-25
L82	6190001280	COIL	E544GN-110248
L83	6170000230	COIL	LW-25
L91	6180002960	S.COIL	NL 322522T-R18J-3
L92	6180002980	S.COIL	NL 322522T-056J
L93	6180002970	S.COIL	NL 322522T-068J
L94	6200001830	S.COIL	NL 322522T-100J
L151	6200003130	S.COIL	NL 322522T-120J
L152	6200003140	S.COIL	NL 322522T-150J
L153	6200001830	S.COIL	NL 322522T-100J
L201	6200005490	S.COIL	NL 322522T-331J
L202	6200008640	S.COIL	NL 322522T-391J
L203	6200001830	S.COIL	NL 322522T-100J
L204	6200003640	S.COIL	MLF1608K 100K-T
L205	6200003640	S.COIL	MLF1608K 100K-T
R1	7030003320	S.RESISTOR	ERJ3GEYJ 101 V (100 Ω)
R2	7030003580	S.RESISTOR	ERJ3GEYJ 153 V (15 kΩ)
R3	7030003520	S.RESISTOR	ERJ3GEYJ 472 V (4.7 kΩ)
R4	7030003400	S.RESISTOR	ERJ3GEYJ 471 V (470 Ω)
R5	7030003360	S.RESISTOR	ERJ3GEYJ 221 V (220 Ω)
R6	7030003320	S.RESISTOR	ERJ3GEYJ 101 V (100 Ω)
R7	7030003600	S.RESISTOR	ERJ3GEYJ 223 V (22 kΩ)
R8	7030003560	S.RESISTOR	ERJ3GEYJ 103 V (10 kΩ)
R9	7030003370	S.RESISTOR	ERJ3GEYJ 271 V (270 Ω)
R10	7030003640	S.RESISTOR	ERJ3GEYJ 473 V (47 kΩ)
R11	7030003290	S.RESISTOR	ERJ3GEYJ 560 V (56 Ω)
R12	7030003200	S.RESISTOR	ERJ3GEYJ 100 V (10 Ω)
R21	7030003360	S.RESISTOR	ERJ3GEYJ 221 V (220 Ω)
R22	7030003560	S.RESISTOR	ERJ3GEYJ 103 V (10 kΩ)
R23	7030005400	S.RESISTOR	RR0816P-202-D (2 kΩ)
R24	7030005400	S.RESISTOR	RR0816P-202-D (2 kΩ)
R25	7030005400	S.RESISTOR	RR0816P-202-D (2 kΩ)
R26	7030005400	S.RESISTOR	RR0816P-202-D (2 kΩ)
R27	7030005400	S.RESISTOR	RR0816P-202-D (2 kΩ)
R28	7030005400	S.RESISTOR	RR0816P-202-D (2 kΩ)
R29	7030005400	S.RESISTOR	RR0816P-202-D (2 kΩ)
R30	7030005400	S.RESISTOR	RR0816P-202-D (2 kΩ)
R31	7030005370	S.RESISTOR	RR0816P-202-B (2 kΩ)
R32	7030005370	S.RESISTOR	RR0816P-202-B (2 kΩ)
R33	7030005370	S.RESISTOR	RR0816P-202-B (2 kΩ)
R34	7030005370	S.RESISTOR	RR0816P-202-B (2 kΩ)
R35	7030005370	S.RESISTOR	RR0816P-202-B (2 kΩ)
R36	7030005390	S.RESISTOR	RR0816P-102-D (1 kΩ)
R37	7030005390	S.RESISTOR	RR0816P-102-D (1 kΩ)
R38	7030005390	S.RESISTOR	RR0816P-102-D (1 kΩ)
R39	7030005390	S.RESISTOR	RR0816P-102-D (1 kΩ)
R40	7030005390	S.RESISTOR	RR0816P-102-D (1 kΩ)
R41	7030005390	S.RESISTOR	RR0816P-102-D (1 kΩ)
R42	7030005380	S.RESISTOR	RR0816P-102-B (1 kΩ)
R43	7030005380	S.RESISTOR	RR0816P-102-B (1 kΩ)
R44	7030005380	S.RESISTOR	RR0816P-102-B (1 kΩ)
R45	7030005380	S.RESISTOR	RR0816P-102-B (1 kΩ)
R46	7030005380	S.RESISTOR	RR0816P-102-B (1 kΩ)
R47	7030003400	S.RESISTOR	ERJ3GEYJ 471 V (470 Ω)
R48	7030003720	S.RESISTOR	ERJ3GEYJ 224 V (220 kΩ)
R49	7030003440	S.RESISTOR	ERJ3GEYJ 102 V (1 kΩ)
R50	7030003440	S.RESISTOR	ERJ3GEYJ 102 V (1 kΩ)
R51	7030003440	S.RESISTOR	ERJ3GEYJ 102 V (1 kΩ)
R52	7030003440	S.RESISTOR	ERJ3GEYJ 102 V (1 kΩ)
R53	7030003440	S.RESISTOR	ERJ3GEYJ 102 V (1 kΩ)
R54	7030003440	S.RESISTOR	ERJ3GEYJ 102 V (1 kΩ)
R55	7030003440	S.RESISTOR	ERJ3GEYJ 102 V (1 kΩ)
R71	7030003490	S.RESISTOR	ERJ3GEYJ 272 V (2.7 kΩ)
R72	7030003780	S.RESISTOR	ERJ3GEYJ 684 V (680 kΩ)
R73	7030003260	S.RESISTOR	ERJ3GEYJ 330 V (33 Ω)
R75	7030003390	S.RESISTOR	ERJ3GEYJ 391 V (390 Ω)
R76	7030003250	S.RESISTOR	ERJ3GEYJ 270 V (27 Ω)
R78	7030003370	S.RESISTOR	ERJ3GEYJ 271 V (270 Ω)
R79	7030003580	S.RESISTOR	ERJ3GEYJ 153 V (15 kΩ)
R80	7030003570	S.RESISTOR	ERJ3GEYJ 123 V (12 kΩ)

S.=Surface mount

[PLL UNIT]

REF NO.	ORDER NO.	DESCRIPTION	
R81	7030003560	S.RESISTOR	ERJ3GEYJ 103 V (10 kΩ)
R83	7030003480	S.RESISTOR	ERJ3GEYJ 222 V (2.2 kΩ)
R85	7030003430	S.RESISTOR	ERJ3GEYJ 821 V (820 Ω)
R86	7030003350	S.RESISTOR	ERJ3GEYJ 181 V (180 Ω)
R91	7030003260	S.RESISTOR	ERJ3GEYJ 330 V (33 Ω)
R92	7030003550	S.RESISTOR	ERJ3GEYJ 822 V (8.2 kΩ)
R93	7030003510	S.RESISTOR	ERJ3GEYJ 392 V (3.9 kΩ)
R94	7030003320	S.RESISTOR	ERJ3GEYJ 101 V (100 Ω)
R95	7030003280	S.RESISTOR	ERJ3GEYJ 470 V (47 Ω)
R96	7030003680	S.RESISTOR	ERJ3GEYJ 104 V (100 kΩ)
R97	7030003440	S.RESISTOR	ERJ3GEYJ 102 V (1 kΩ)
R98	7030003440	S.RESISTOR	ERJ3GEYJ 102 V (1 kΩ)
R99	7030003440	S.RESISTOR	ERJ3GEYJ 102 V (1 kΩ)
R100	7030003510	S.RESISTOR	ERJ3GEYJ 392 V (3.9 kΩ)
R101	7030003370	S.RESISTOR	ERJ3GEYJ 271 V (270 Ω)
R102	7030003230	S.RESISTOR	ERJ3GEYJ 180 V (18 Ω)
R103	7030003370	S.RESISTOR	ERJ3GEYJ 271 V (270 Ω)
R104	7030003400	S.RESISTOR	ERJ3GEYJ 471 V (470 Ω)
R107	7030003280	S.RESISTOR	ERJ3GEYJ 470 V (47 Ω)
R108	7030003320	S.RESISTOR	ERJ3GEYJ 101 V (100 Ω)
R109	7030003360	S.RESISTOR	ERJ3GEYJ 221 V (220 Ω)
R110	7030003360	S.RESISTOR	ERJ3GEYJ 221 V (220 Ω)
R111	7030003490	S.RESISTOR	ERJ3GEYJ 272 V (2.7 kΩ)
R112	7030003560	S.RESISTOR	ERJ3GEYJ 103 V (10 kΩ)
R113	7030003360	S.RESISTOR	ERJ3GEYJ 221 V (220 Ω)
R114	7030003230	S.RESISTOR	ERJ3GEYJ 180 V (18 Ω)
R115	7030003670	S.RESISTOR	ERJ3GEYJ 823 V (82 kΩ)
R116	7030003620	S.RESISTOR	ERJ3GEYJ 333 V (33 kΩ)
R117	7030003300	S.RESISTOR	ERJ3GEYJ 680 V (68 Ω)
R151	7030003400	S.RESISTOR	ERJ3GEYJ 471 V (470 Ω)
R152	7030003720	S.RESISTOR	ERJ3GEYJ 224 V (220 kΩ)
R153	7030005400	S.RESISTOR	RR0816P-202-D (2 kΩ)
R154	7030005400	S.RESISTOR	RR0816P-202-D (2 kΩ)
R155	7030005400	S.RESISTOR	RR0816P-202-D (2 kΩ)
R156	7030005400	S.RESISTOR	RR0816P-202-D (2 kΩ)
R157	7030005400	S.RESISTOR	RR0816P-202-D (2 kΩ)
R158	7030005400	S.RESISTOR	RR0816P-202-D (2 kΩ)
R159	7030005400	S.RESISTOR	RR0816P-202-D (2 kΩ)
R160	7030005400	S.RESISTOR	RR0816P-202-D (2 kΩ)
R161	7030005370	S.RESISTOR	RR0816P-202-B (2 kΩ)
R162	7030005370	S.RESISTOR	RR0816P-202-B (2 kΩ)
R163	7030005370	S.RESISTOR	RR0816P-202-B (2 kΩ)
R164	7030005390	S.RESISTOR	RR0816P-102-D (1 kΩ)
R165	7030005390	S.RESISTOR	RR0816P-102-D (1 kΩ)
R166	7030005390	S.RESISTOR	RR0816P-102-D (1 kΩ)
R167	7030005390	S.RESISTOR	RR0816P-102-D (1 kΩ)
R168	7030005390	S.RESISTOR	RR0816P-102-D (1 kΩ)
R169	7030005390	S.RESISTOR	RR0816P-102-D (1 kΩ)
R170	7030005380	S.RESISTOR	RR0816P-102-B (1 kΩ)
R171	7030005380	S.RESISTOR	RR0816P-102-B (1 kΩ)
R172	7030005380	S.RESISTOR	RR0816P-102-B (1 kΩ)
R178	7030003430	S.RESISTOR	ERJ3GEYJ 821 V (820 Ω)
R180	7030003440	S.RESISTOR	ERJ3GEYJ 102 V (1 kΩ)
R181	7030003440	S.RESISTOR	ERJ3GEYJ 102 V (1 kΩ)
R182	7030003440	S.RESISTOR	ERJ3GEYJ 102 V (1 kΩ)
R183	7030003440	S.RESISTOR	ERJ3GEYJ 102 V (1 kΩ)
R201	7030003400	S.RESISTOR	ERJ3GEYJ 471 V (470 Ω)
R202	7030003720	S.RESISTOR	ERJ3GEYJ 224 V (220 kΩ)
R203	7030005400	S.RESISTOR	RR0816P-202-D (2 kΩ)
R204	7030005400	S.RESISTOR	RR0816P-202-D (2 kΩ)
R205	7030005400	S.RESISTOR	RR0816P-202-D (2 kΩ)
R206	7030005400	S.RESISTOR	RR0816P-202-D (2 kΩ)
R207	7030005400	S.RESISTOR	RR0816P-202-D (2 kΩ)
R208	7030005400	S.RESISTOR	RR0816P-202-D (2 kΩ)
R209	7030005400	S.RESISTOR	RR0816P-202-D (2 kΩ)
R210	7030005400	S.RESISTOR	RR0816P-202-D (2 kΩ)
R211	7030005370	S.RESISTOR	RR0816P-202-B (2 kΩ)
R212	7030005370	S.RESISTOR	RR0816P-202-B (2 kΩ)
R213	7030005370	S.RESISTOR	RR0816P-202-B (2 kΩ)
R214	7030005390	S.RESISTOR	RR0816P-102-D (1 kΩ)
R215	7030005390	S.RESISTOR	RR0816P-102-D (1 kΩ)
R216	7030005390	S.RESISTOR	RR0816P-102-D (1 kΩ)
R217	7030005390	S.RESISTOR	RR0816P-102-D (1 kΩ)
R218	7030005390	S.RESISTOR	RR0816P-102-D (1 kΩ)
R219	7030005390	S.RESISTOR	RR0816P-102-D (1 kΩ)
R220	7030005380	S.RESISTOR	RR0816P-102-B (1 kΩ)
R221	7030005380	S.RESISTOR	RR0816P-102-B (1 kΩ)
R222	7030005380	S.RESISTOR	RR0816P-102-B (1 kΩ)
R228	7030003430	S.RESISTOR	ERJ3GEYJ 821 V (820 Ω)
R230	7030003440	S.RESISTOR	ERJ3GEYJ 102 V (1 kΩ)
R231	7030003440	S.RESISTOR	ERJ3GEYJ 102 V (1 kΩ)
R232	7030003440	S.RESISTOR	ERJ3GEYJ 102 V (1 kΩ)

[PLL UNIT]

REF NO.	ORDER NO.	DESCRIPTION	
R233	7030003440	S.RESISTOR	ERJ3GEYJ 102 V (1 kΩ)
R235	7030003440	S.RESISTOR	ERJ3GEYJ 102 V (1 kΩ)
R236	7030003320	S.RESISTOR	ERJ3GEYJ 101 V (100 Ω)
C1	4030007070	S.CERAMIC	C1608 CH 1H 330J-T-A
C3	4030006880	S.CERAMIC	C1608 JB 1H 472K-T-A
C4	4030006880	S.CERAMIC	C1608 JB 1H 472K-T-A
C5	4030007140	S.CERAMIC	C1608 CH 1H 121J-T-A
C6	4030006880	S.CERAMIC	C1608 JB 1H 472K-T-A
C7	4030006880	S.CERAMIC	C1608 JB 1H 472K-T-A
C8	4030006880	S.CERAMIC	C1608 JB 1H 472K-T-A
C9	4030007170	S.CERAMIC	C1608 CH 1H 221J-T-A
C10	4030007030	S.CERAMIC	C1608 CH 1H 150J-T-A
C11	4030006880	S.CERAMIC	C1608 JB 1H 472K-T-A
C12	4030006910	S.CERAMIC	C1608 CH 1H 0R5C-T-A
C13	4030007030	S.CERAMIC	C1608 CH 1H 150J-T-A
C14	4030006880	S.CERAMIC	C1608 JB 1H 472K-T-A
C15	4030006880	S.CERAMIC	C1608 JB 1H 472K-T-A
C16	4030007120	S.CERAMIC	C1608 CH 1H 820J-T-A
C21	4030006880	S.CERAMIC	C1608 JB 1H 472K-T-A
C23	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C24	4510006220	S.ELECTROLYTIC	ECEV1CA101UP
C25	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C26	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C27	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C28	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C29	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C30	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C31	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C32	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C33	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C34	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C35	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C36	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C37	4030007070	S.CERAMIC	C1608 CH 1H 330J-T-A
C38	4030007010	S.CERAMIC	C1608 CH 1H 100D-T-A
C39	4030011540	S.CERAMIC	C1608 CH 1H 750J-T-A
C40	4030006980	S.CERAMIC	C1608 CH 1H 070D-T-A
C41	4030007120	S.CERAMIC	C1608 CH 1H 820J-T-A
C42	4030006930	S.CERAMIC	C1608 CH 1H 020C-T-A
C43	4030007100	S.CERAMIC	C1608 CH 1H 560J-T-A
C44	4030007010	S.CERAMIC	C1608 CH 1H 100D-T-A
C50	4030006880	S.CERAMIC	C1608 JB 1H 472K-T-A
C51	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C52	4030006880	S.CERAMIC	C1608 JB 1H 472K-T-A
C53	4030006880	S.CERAMIC	C1608 JB 1H 472K-T-A
C54	4030006880	S.CERAMIC	C1608 JB 1H 472K-T-A
C55	4030006880	S.CERAMIC	C1608 JB 1H 472K-T-A
C56	4030007110	S.CERAMIC	C1608 CH 1H 680J-T-A
C57	4030007090	S.CERAMIC	C1608 CH 1H 470J-T-A
C58	4030007100	S.CERAMIC	C1608 CH 1H 560J-T-A
C59	4030011840	S.CERAMIC	C1608 CH 1H 241J-T-A
C60	4030009580	S.CERAMIC	C1608 JB 1H 681K-T-A
C71	4550006250	S.TANTALUM	TEMSVA 1A 106M-8L
C72	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C73	4030006850	S.CERAMIC	C1608 JB 1H 471K-T-A
C74	4510004630	S.ELECTROLYTIC	ECEV1CA100SR
C75	4030007140	S.CERAMIC	C1608 CH 1H 121J-T-A
C76	4610001830	S.TRIMMER	TZBX4N100BA110T00
C77	4030007010	S.CERAMIC	C1608 CH 1H 100D-T-A
C78	4030006880	S.CERAMIC	C1608 JB 1H 472K-T-A
C79	4030006930	S.CERAMIC	C1608 CH 1H 020C-T-A
C80	4030006880	S.CERAMIC	C1608 JB 1H 472K-T-A
C81	4030006880	S.CERAMIC	C1608 JB 1H 472K-T-A
C82	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C83	4030006850	S.CERAMIC	C1608 JB 1H 471K-T-A
C84	4510004630	S.ELECTROLYTIC	ECEV1CA100SR
C85	4030006850	S.CERAMIC	C1608 JB 1H 471K-T-A
C86	4610001830	S.TRIMMER	TZBX4N100BA110T00 10P
C87	4030006950	S.CERAMIC	C1608 CH 1H 040C-T-A
C88	4030006880	S.CERAMIC	C1608 JB 1H 472K-T-A
C89	4030010780	S.CERAMIC	C1608 CH 1H 1R5C-T-A
C90	4030006880	S.CERAMIC	C1608 JB 1H 472K-T-A
C91	4030006880	S.CERAMIC	C1608 JB 1H 472K-T-A
C92	4030006880	S.CERAMIC	C1608 JB 1H 472K-T-A
C93	4030006880	S.CERAMIC	C1608 JB 1H 472K-T-A
C94	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C95	4030006880	S.CERAMIC	C1608 JB 1H 472K-T-A
C96	4030007080	S.CERAMIC	C1608 CH 1H 390J-T-A
C97	4030006990	S.CERAMIC	C1608 CH 1H 080D-T-A
C98	4030007090	S.CERAMIC	C1608 CH 1H 470J-T-A

S.=Surface mount

[PLL UNIT]

REF NO.	ORDER NO.	DESCRIPTION	
C99	4030006930	S.CERAMIC	C1608 CH 1H 020C-T-A
C100	4030007080	S.CERAMIC	C1608 CH 1H 390J-T-A
C101	4030006880	S.CERAMIC	C1608 JB 1H 472K-T-A
C102	4030007020	S.CERAMIC	C1608 CH 1H 120J-T-A
C103	4030006970	S.CERAMIC	C1608 CH 1H 060D-T-A
C104	4030006880	S.CERAMIC	C1608 JB 1H 472K-T-A
C105	4030006880	S.CERAMIC	C1608 JB 1H 472K-T-A
C106	4510006220	S.ELECTROLYTIC	ECEV1CA101UP
C107	4030006880	S.CERAMIC	C1608 JB 1H 472K-T-A
C108	4030006880	S.CERAMIC	C1608 JB 1H 472K-T-A
C110	4030006880	S.CERAMIC	C1608 JB 1H 472K-T-A
C111	4030006880	S.CERAMIC	C1608 JB 1H 472K-T-A
C112	4030006880	S.CERAMIC	C1608 JB 1H 472K-T-A
C113	4030006880	S.CERAMIC	C1608 JB 1H 472K-T-A
C114	4030006880	S.CERAMIC	C1608 JB 1H 472K-T-A
C115	4030006880	S.CERAMIC	C1608 JB 1H 472K-T-A
C116	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C117	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C118	4030006880	S.CERAMIC	C1608 JB 1H 472K-T-A
C119	4510004430	S.ELECTROLYTIC	ECEV1CV220WR
C120	4030006850	S.CERAMIC	C1608 JB 1H 471K-T-A
C121	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C122	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C123	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C124	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C125	4030007090	S.CERAMIC	C1608 CH 1H 470J-T-A
C126	4550006250	S.TANTALUM	TEMSVA 1A 106M-8L
C127	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C128	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C151	4030006880	S.CERAMIC	C1608 JB 1H 472K-T-A
C152	4030007040	S.CERAMIC	C1608 CH 1H 180J-T-A
C153	4030006960	S.CERAMIC	C1608 CH 1H 050C-T-A
C154	4030007070	S.CERAMIC	C1608 CH 1H 330J-T-A
C155	4030006930	S.CERAMIC	C1608 CH 1H 020C-T-A
C156	4030007040	S.CERAMIC	C1608 CH 1H 180J-T-A
C157	4030006880	S.CERAMIC	C1608 JB 1H 472K-T-A
C164	4030006880	S.CERAMIC	C1608 JB 1H 472K-T-A
C165	4510004630	S.ELECTROLYTIC	ECEV1CA100SR
C167	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C201	4030006880	S.CERAMIC	C1608 JB 1H 472K-T-A
C202	4030006850	S.CERAMIC	C1608 JB 1H 471K-T-A
C203	4030007120	S.CERAMIC	C1608 CH 1H 820J-T-A
C204	4030009490	S.CERAMIC	C1608 JB 1H 821K-T-A
C205	4030007070	S.CERAMIC	C1608 CH 1H 330J-T-A
C206	4030010040	S.CERAMIC	C1608 JB 1H 561K-T-A
C207	4030006880	S.CERAMIC	C1608 JB 1H 472K-T-A
C214	4030006880	S.CERAMIC	C1608 JB 1H 472K-T-A
C215	4510004630	S.ELECTROLYTIC	ECEV1CA100SR
C217	4030011600	S.CERAMIC	C1608 JB 1C 104KT-N
C305	4510004630	S.ELECTROLYTIC	ECEV1CA100SR
C310	4030007090	S.CERAMIC	C1608 CH 1H 470J-T-A
C311	4030007090	S.CERAMIC	C1608 CH 1H 470J-T-A
C312	4030007090	S.CERAMIC	C1608 CH 1H 470J-T-A
C313	4030007090	S.CERAMIC	C1608 CH 1H 470J-T-A
C314	4030007090	S.CERAMIC	C1608 CH 1H 470J-T-A
C315	4030007090	S.CERAMIC	C1608 CH 1H 470J-T-A
C316	4030007090	S.CERAMIC	C1608 CH 1H 470J-T-A
C317	4030006880	S.CERAMIC	C1608 JB 1H 472K-T-A
C318	4030006880	S.CERAMIC	C1608 JB 1H 472K-T-A
C319	4030006880	S.CERAMIC	C1608 JB 1H 472K-T-A
C320	4030006850	S.CERAMIC	C1608 JB 1H 471K-T-A
C321	4030006880	S.CERAMIC	C1608 JB 1H 472K-T-A
C322	4030006880	S.CERAMIC	C1608 JB 1H 472K-T-A
C323	4030006880	S.CERAMIC	C1608 JB 1H 472K-T-A
C324	4030006880	S.CERAMIC	C1608 JB 1H 472K-T-A
C325	4030007100	S.CERAMIC	C1608 CH 1H 560J-T-A
C326	4030006880	S.CERAMIC	C1608 JB 1H 472K-T-A
C327	4030006880	S.CERAMIC	C1608 JB 1H 472K-T-A
RL1	6330001320	RELAY	AHY103
J2	6510019980	S.CONNECTOR	52808-1690
J3	6450000140	CONNECTOR	HSJ0807-01-010
J4	6450000140	CONNECTOR	HSJ0807-01-010
W1	7030003860	S.JUMPER	ERJ3GE JPW V
W2	7030003860	S.JUMPER	ERJ3GE JPW V
W18	7030003860	S.JUMPER	ERJ3GE JPW V
W19	7030003860	S.JUMPER	ERJ3GE JPW V

[PLL UNIT]

REF NO.	ORDER NO.	DESCRIPTION	
WS1	8970023350	M.OTHER	RX2240 1.5DCOAXIAL (4)/PL
EP1	0910051124	PCB	B 5274D
EP2	6910012350	S.BEAD	MMZ1608Y 102BT
EP3	6910012350	S.BEAD	MMZ1608Y 102BT
EP4	6910012350	S.BEAD	MMZ1608Y 102BT
EP5	6910012350	S.BEAD	MMZ1608Y 102BT
EP6	6910012350	S.BEAD	MMZ1608Y 102BT
EP7	6910012350	S.BEAD	MMZ1608Y 102BT
EP8	6910012350	S.BEAD	MMZ1608Y 102BT

S.=Surface mount

SECTION 6 MECHANICAL PARTS AND DISASSEMBLY

[CHASSIS PARTS]

REF. NO.	ODER NO.	DESCRIPTION	QTY.
J1	6510000370	Connector MR-DS	1
W3	8900007000	Cable OPC-684	1
W4	8900007000	Cable OPC-684	1
W5	8900007000	Cable OPC-684	1
W6	8900007000	Cable OPC-684	1
MP1	8010017710	2240 main Chassis	1
MP2	8110006700	2240 U-cover	1
MP3	8110006690	2240 L-cover	1
MP4	8930005790	Collar foot (A)	1
MP5	8930005800	Collar foot (B)	1
MP6	8010001520	Stand (C)	1
MP7	8930002900	Rubbr foot (A)	2
MP8	8930035240	1546 TR-B Clip	1
MP9	8930049600	2240 IC Clip	1
MP10	8810008660	Screw PH BO M3x8 NI-ZU (BT)	4
MP11	8810008660	Screw PH BO M3x8 NI-ZU (BT)	2
MP12	8810008660	Screw PH BO M3x8 NI-ZU (BT)	2
MP13	8810005770	Screw Bih M3x8 ZK	8
MP14	8810005770	Screw Bih M3x8 ZK	2
MP15	8810008660	Screw PH BO M3x8 NI-ZU (BT)	6
MP16	8810008660	Screw PH BO M3x8 NI-ZU (BT)	5
MP17	8810008660	Screw PH BO M3x8 NI-ZU (BT)	2
MP18	8810008660	Screw PH BO M3x8 NI-ZU (BT)	1
MP19	8930037001	1691 Earth plate	1
MP20	8810008660	Screw PH BO M3x8 NI-ZU (BT)	2
MP22	8810009130	Screw PH BO M3x12 NI-ZU (BT)	2
MP23	8410002310	2240 Heatsink	1
MP24	8810008660	Screw PH BO M3x8 NI-ZU (BT)	2
MP25	8930049610	2240 Unit holder	1
MP26	8810003960	Screw M2.6x5	2

[FRONT UNIT]

REF. NO.	ODER NO.	DESCRIPTION	QTY.
SP1	2510000670	VS-50-0827	1
W3	8900008940	Cable OPC-886	1
W4	8900008930	Cable OPC-885	1
W5	8900007000	Cable OPC-684	1
EP1	6910012480	RMS20-250-201-1R	1
EP2	6450001230	Snap plate HLJ0999-01-480	1
MP1	8210016030	2240 Front cover	1
MP2	8930001770	SP net	1
MP4	8930048740	2240 9-Key	1
MP5	8930048730	2240 6-Key	1
MP6	8930048750	2240 20-Key	1
MP7	8930048710	2240 Brake plate	1
MP9	8930049370	2240 Brake sheet	1
MP10	8830001010	Screw Hex nut (A)	1
MP11	8830001010	Screw Hex nut (A)	1
MP12	8830001410	1897 Nut	1
MP13	8610010420	Knob N-261	1
MP14	8610010420	Knob N-261	1
MP15	8610010710	Knob N-272	1
MP16	8610010710	Knob N-272	1
MP17	8610009160	Knob N-213 Base	1
MP18	8610009170	Knob N-213 Cover	1
MP21	8010017770	2240 F-Chassis	1
MP24	8810008660	Screw PH BO M3x8 NI-ZU (BT)	5
MP25	8810008660	Screw PH BO M3x8 NI-ZU (BT)	1
MP26	8930048890	2240 SP holder	1
MP27	8810008660	Screw PH BO M3x8 NI-ZU (BT)	4
MP28	8810008660	Screw PH BO M3x8 NI-ZU (BT)	4
MP37	8930049870	2240 SP sponge	1
MP38	8930049840	Knob sheet (B)	2

[DISPLAY UNIT]

REF. NO.	ODER NO.	DESCRIPTION	QTY.
DS101	5030001690	LCD HLCF7395-012400	1
EP2	8930049630	LCD contact SRCN-2240-SP-N-W	1
MP1	8210016060	2240 Reflector	1
MP2	8930048880	2240 LCD Holder	1
MP3	8930049380	2240 LCD Filter	1

[MAIN UNIT]

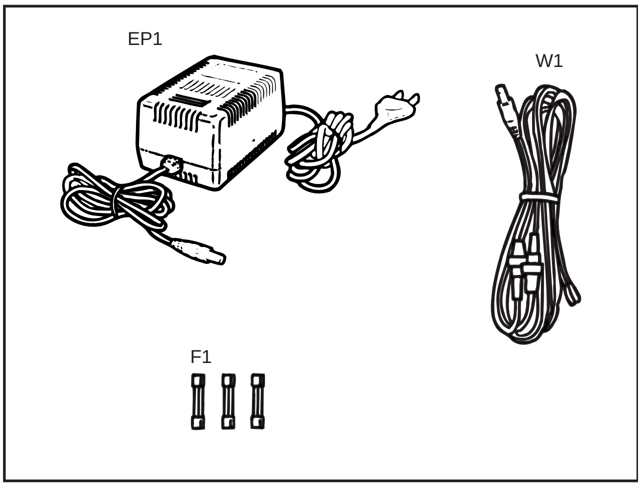
REF. NO.	ODER NO.	DESCRIPTION	QTY.
MP382	8510005990	724 Shield case cover	1
MP442	8510005160	602 Shield case cover	1

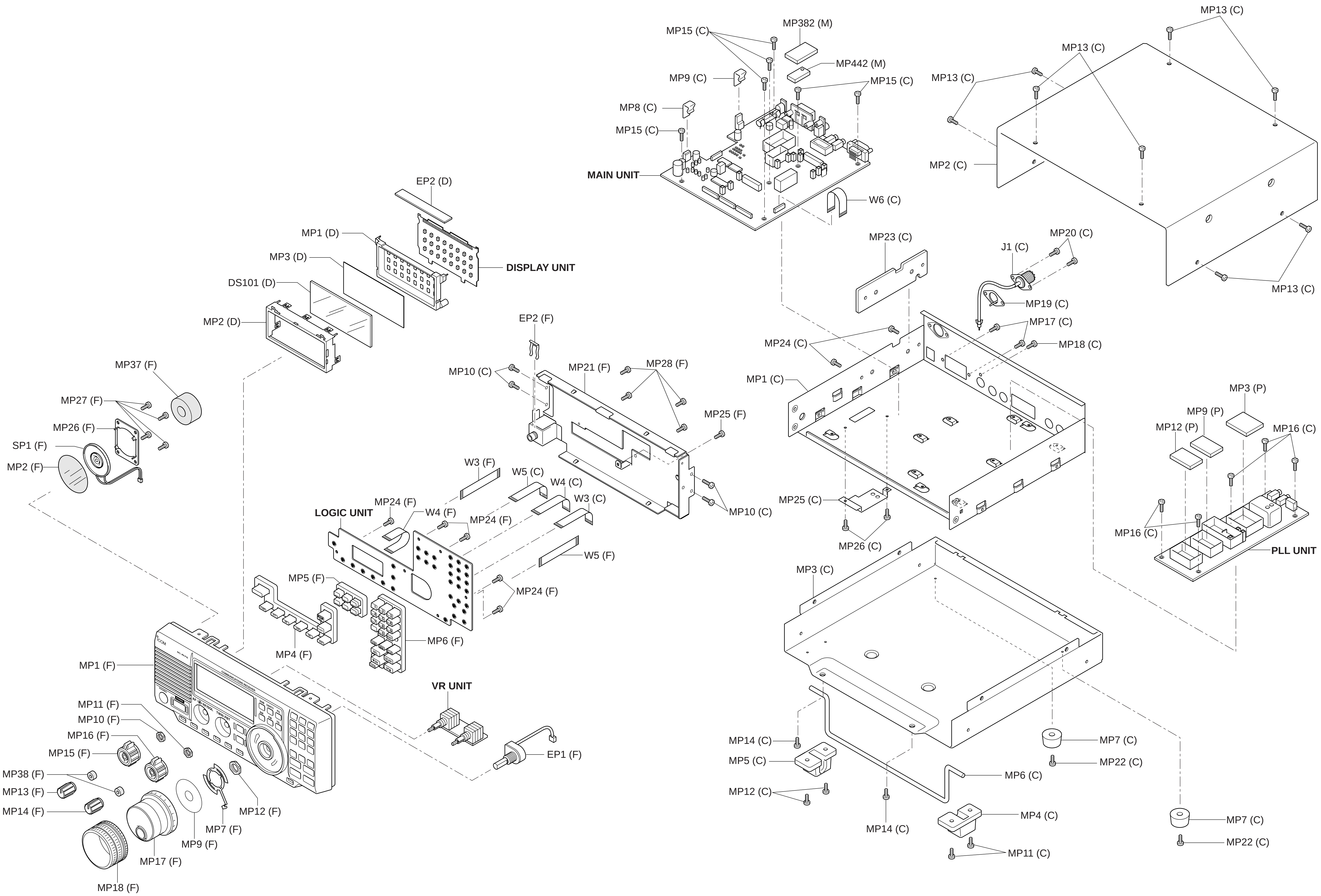
[PLL UNIT]

REF. NO.	ODER NO.	DESCRIPTION	QTY.
MP3	8510010770	1876 DDS cover	1
MP9	8510005990	724 Shield case cover	1
MP12	8510005990	724 Shield case cover	1

[ACCESSORIES]

REF. NO.	ODER NO.	DESCRIPTION	QTY.
F1	Optional product	Fuse FGB 3A [USA], [EUR], [OTH]	1
	Optional product	Fuse FGB 3A [UK], [SEA]	3
W1	Optional product	Cable OPC-869 [UK], [SEA]	1
EP1	Optional product	Charger AD-55A [USA]	1
	Optional product	Charger AD-55 [EUR], [OTH]	1
	Optional product	Charger AD-55V [AUS]	1

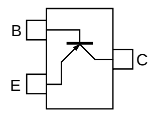
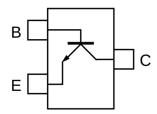
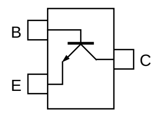
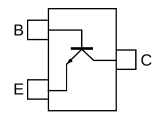
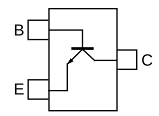
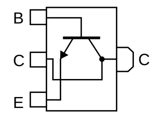
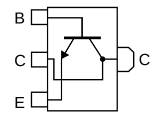
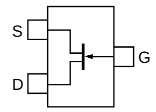
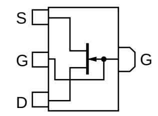
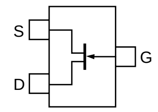
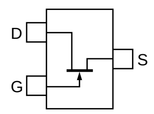
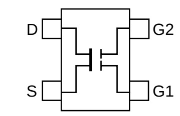
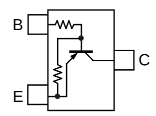
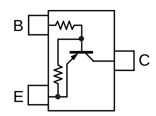
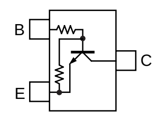
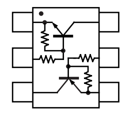
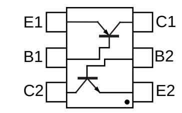




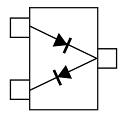
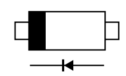
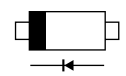
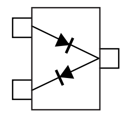
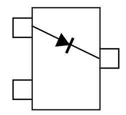
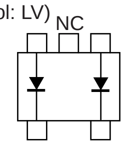
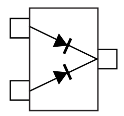
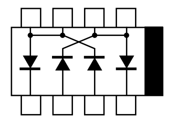
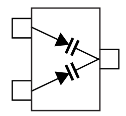
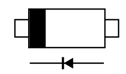
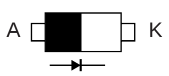
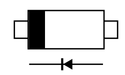
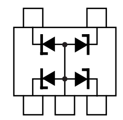
UNIT abbreviation (C): CHASSIS PARTS, (P): PLL UNIT, (M): MAIN UNIT, (F): FRONT UNIT, (D): DISPLAY UNIT

SECTION 7 SEMI-CONDUCTOR INFORMATION

● TRANSISTOR AND FET'S

2SA1576 R (Symbol: FR) 	**2SC4081 R** (Symbol: BR) 	**2SC4116 BL** (Symbol: LL) 	**2SC4117 BL** (Symbol: CL) 	**2SC4405 3** (Symbol: OY3) 
2SC4673 D (Symbol: CO) 	**2SD1664 Q** (Symbol: DA) 	**2SK1740** (Symbol: IJ) 	**2SK2171 4** (Symbol: KM) 	**2SK508 K52** (Symbol: K52) 
2SK882 GR (Symbol: TGR) 	**3SK131 MAS** (Symbol: V11) 	**DTA114 EU** (Symbol: 14) 	**DTA144 EU** (Symbol: 16) 	**DTC114 EU** (Symbol: 14) 
XP4311 (Symbol: 3X) 	**XP4601** (Symbol: 5C) 			

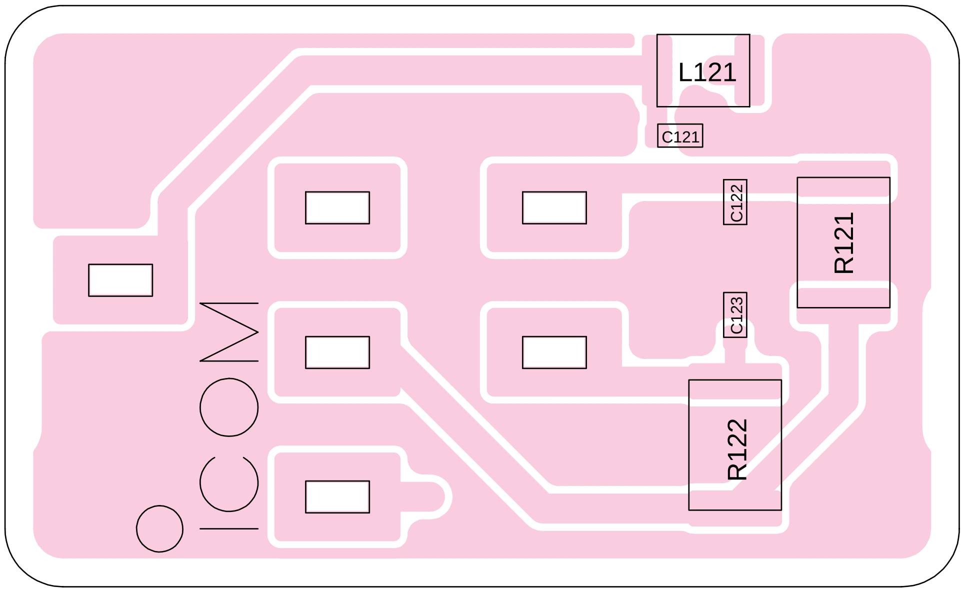
● DIODES

1SS302 (Symbol: C3) 	**1SS355** (Symbol: A) 	**1SS373** (Symbol: S4) 	**1SS375** (Symbol: FH) 	**1SV263** (Symbol: JV) 
1SV265 (Symbol: LV) NC 	**DAN222** (Symbol: N) 	**HSB88WS** (Symbol: Silver line) 	**KV1470** (Symbol: F7) 	**MA729** (Symbol: 2B) 
MA77 (Symbol: 4B) 	**MA8051 M** (Symbol: 5^1) 	**NNCD6.2G** (Symbol: 6.2G) 		

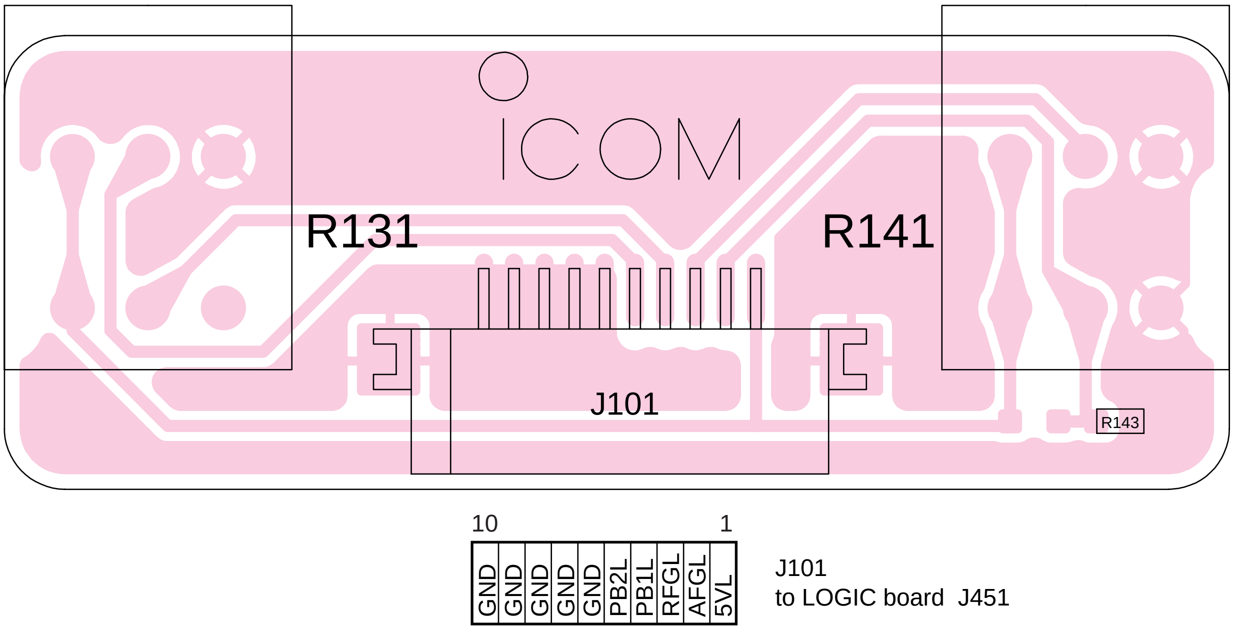
SECTION 8 BOARD LAYOUTS

8-1 PHONE AND VR BOARDS

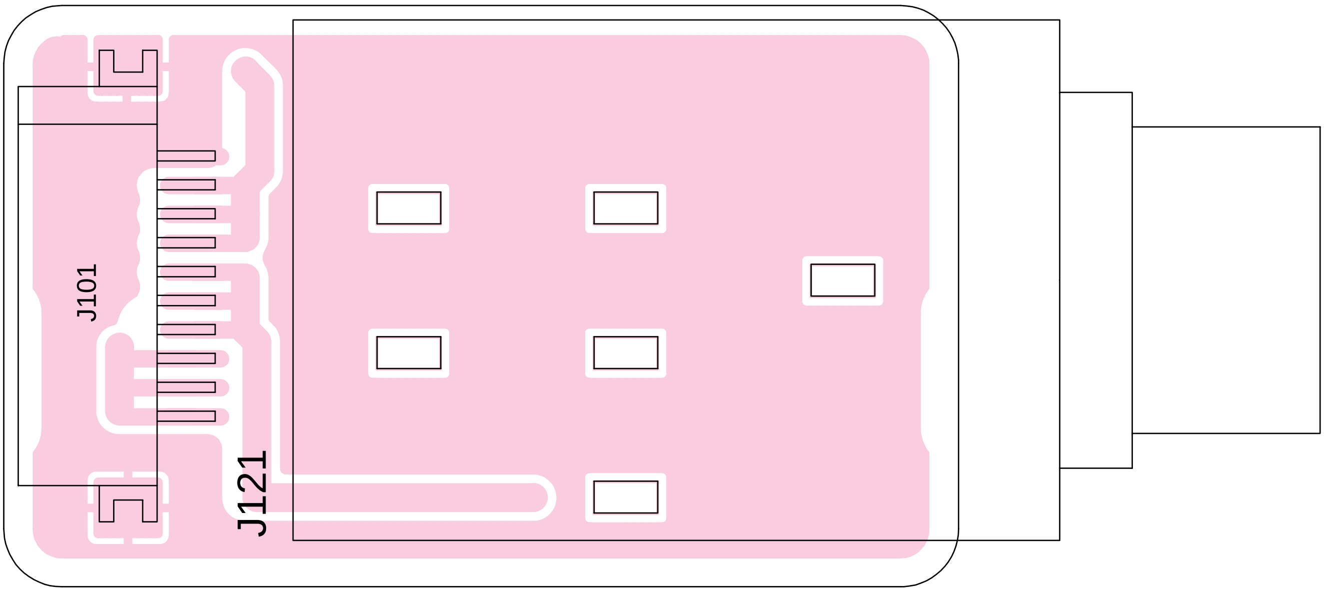
• PHONE BOARD
TOP VIEW



• VR BOARD



- **PHONE BOARD**
  BOTTOM VIEW

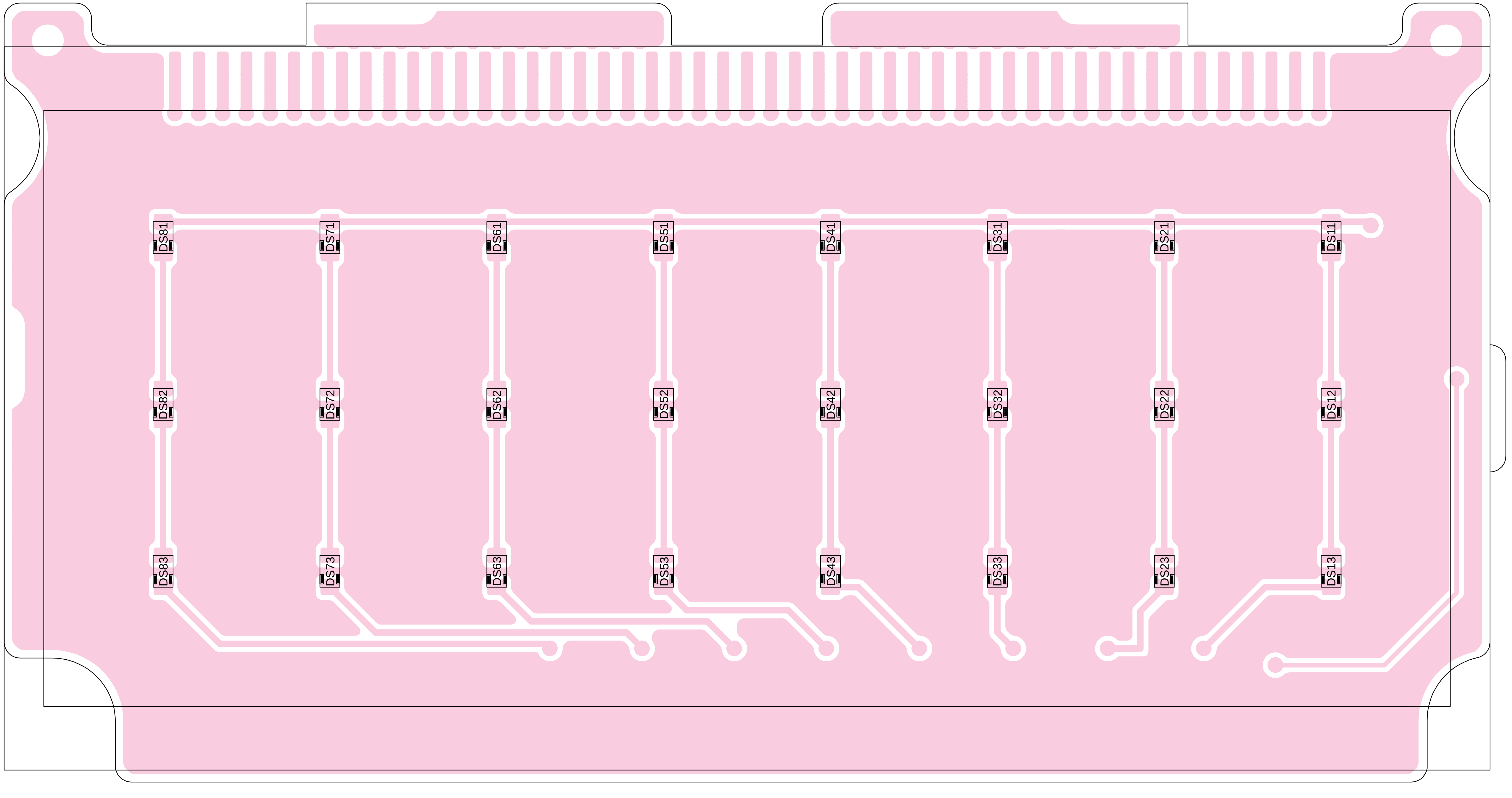


10	GND
	AFE
	AFE
	AFE
	ESPO
	ESPO
	ESPO
	AFO
	AFO
1	AFO

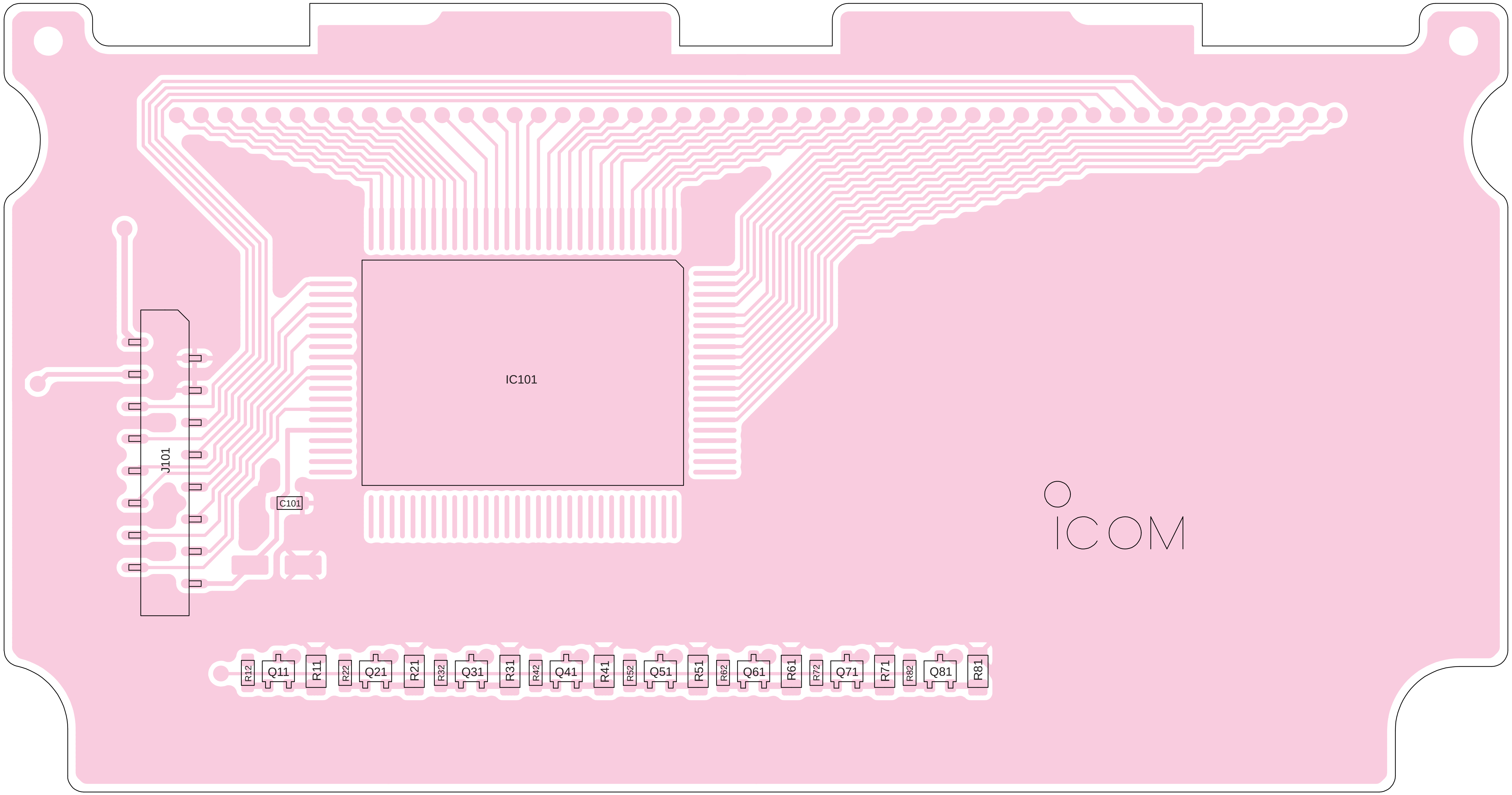
J101
to LOGIC board J471

8-2 DISPLAY BOARD

- **TOP VIEW**



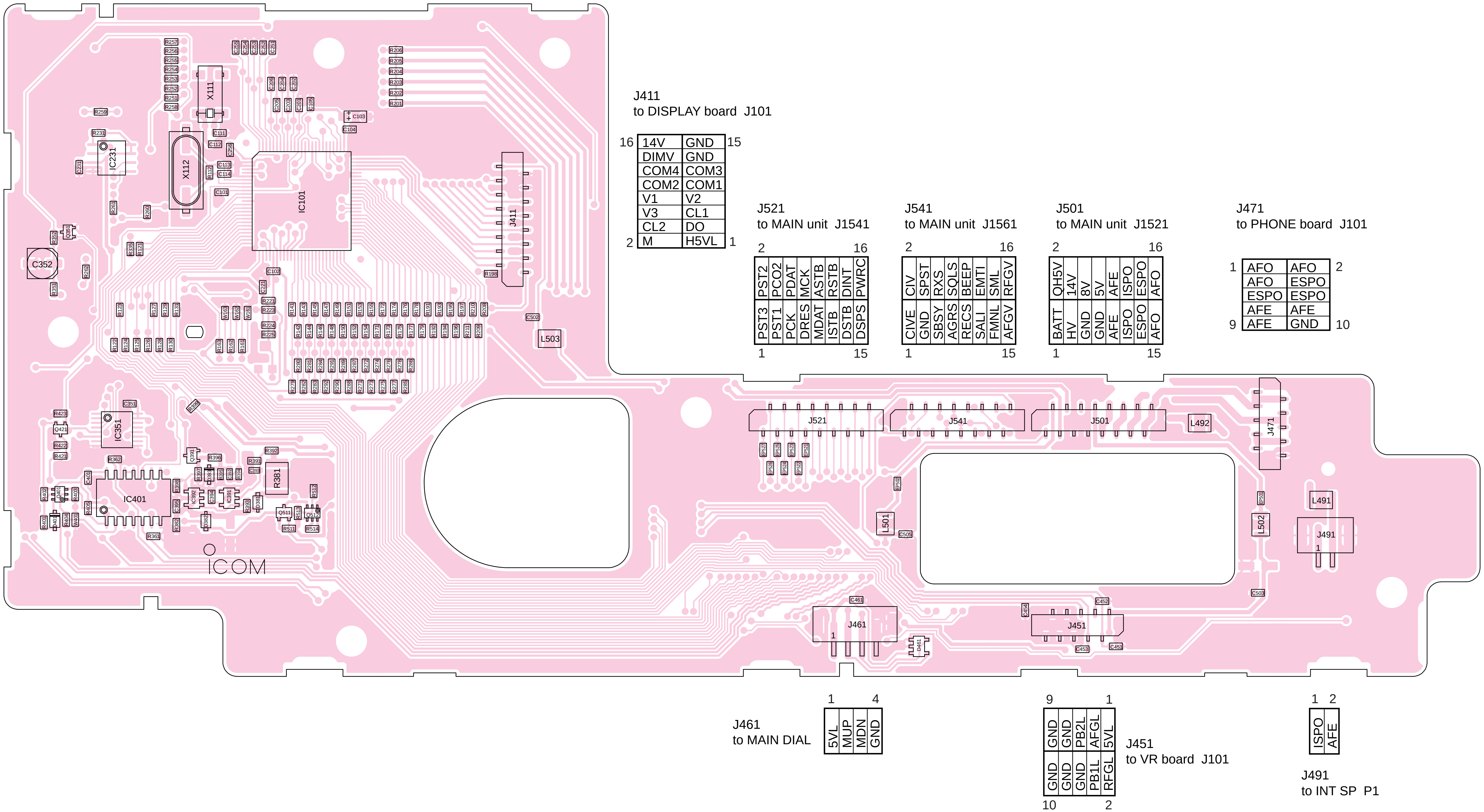
• **BOTTOM VIEW**



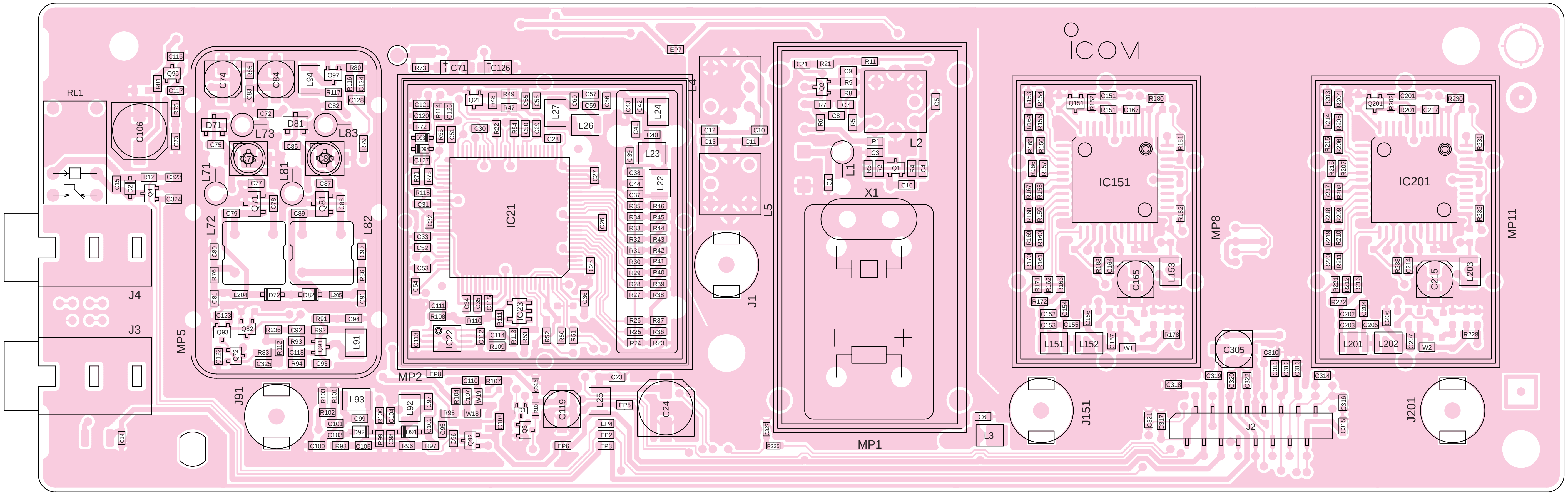
16	14V	GND	15
	DIMV	GND	
	COM4	COM3	
	COM2	COM1	
	V1	V2	
	V3	CL1	
	CL2	DO	
2	M	H5VL	1

J101
to LOGIC board J411

8-3 LOGIC BOARD



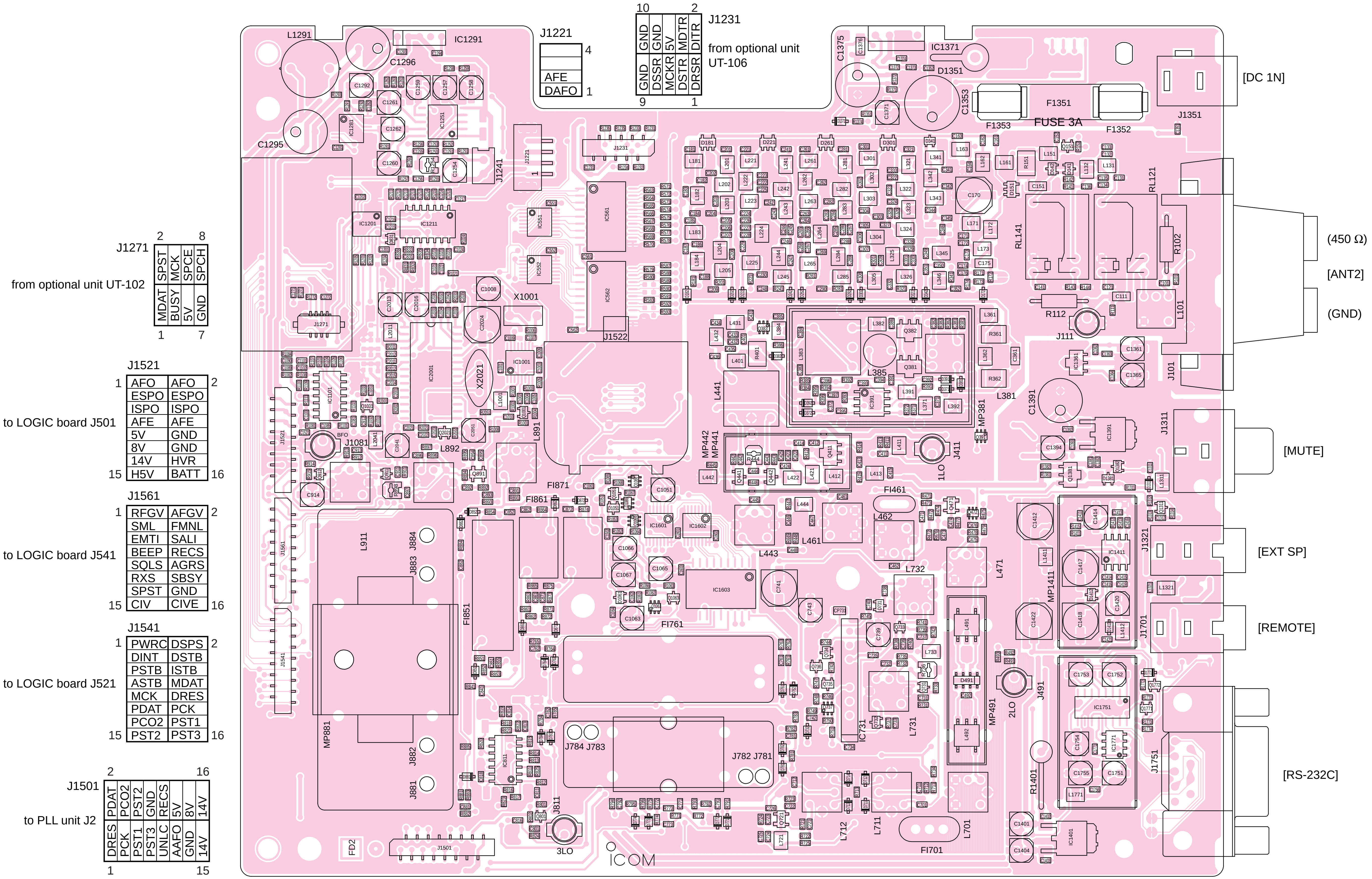
8-4 PLL UNIT



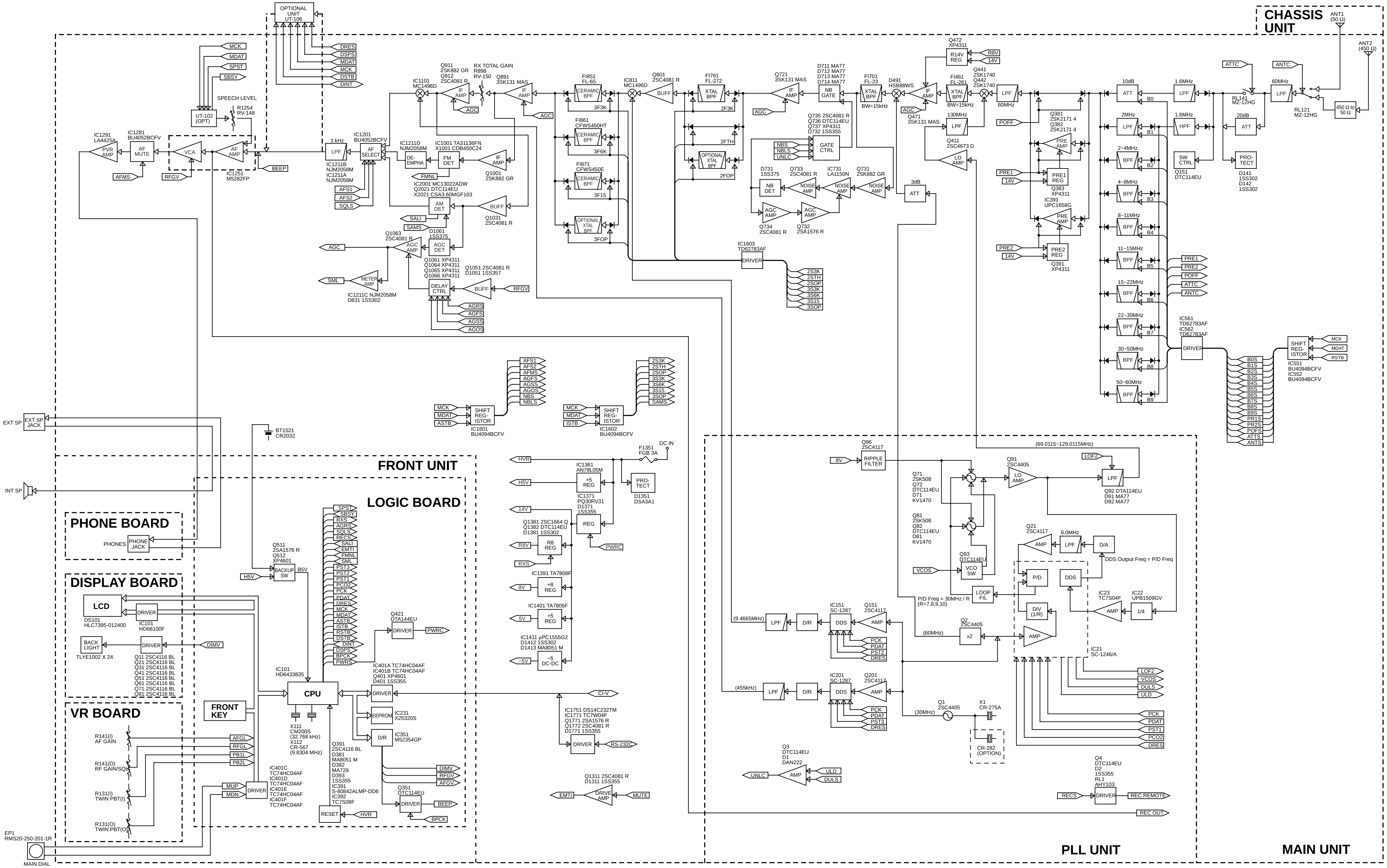
	2							16
	14V	GND	AAFO	UNLC	PST3	PST1	PCK	DRES
	14V	8V	5V	RECS	GND	PST2	PCO2	PDAT
	1							15

J2
to MAIN unit J1501

8-5 MAIN UNIT

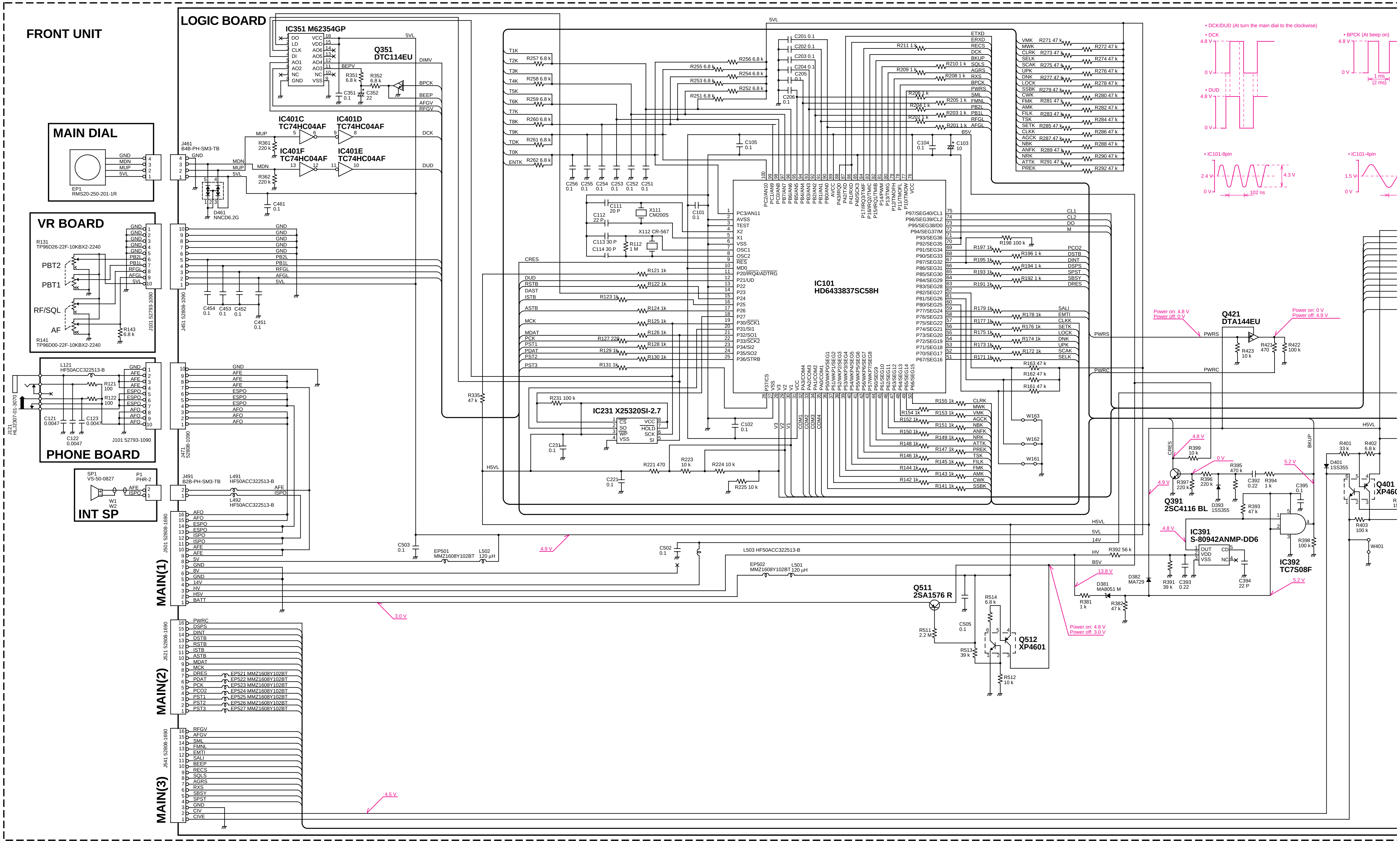

J1221
AFE
DAFO
4
1
J1231
from optional unit UT-106
10
2
9
1
GND GND 5V MDTR DITR
GND DSSR MCKR DSTR DRSR
J1271
from optional unit UT-102
SPST MCK SPCE SPCH
MDAT BUSY 5V GND
J1521
to LOGIC board J501
AFO AFO
ESPO ESPO
ISPO ISPO
AFE AFE
5V GND
8V GND
14V HVR
H5V BATT
J1561
to LOGIC board J541
RFGV AFGV
SML FMNL
EMTI SALI
BEEP RECS
SQLS AGRS
RXS SBSY
SPST GND
CIV CIVE
J1541
to LOGIC board J521
PWRC DSPS
DINT DSTB
PSTB ISTB
ASTB MDAT
MCK DRES
PDAT PCK
PCO2 PST1
PST2 PST3
J1501
to PLL unit J2
PDAT PCO2 PST2 GND RECS 5V 8V 14V
DRES PCK PST1 PST3 UNLC AAFO GND 14V
[DC 1N]
J1351
F1351
F1352
F1353
FUSE 3A
(450 Ω)
[ANT2]
(GND)
[MUTE]
[EXT SP]
[REMOTE]
[RS-232C]
J1311
J1321
J1701
J1751
J101
J111
RL121
RL141
1LO
2LO
3LO
FI701
FI761
FI861
FI871
FI461
X1001
X2021
MP881
ICOM

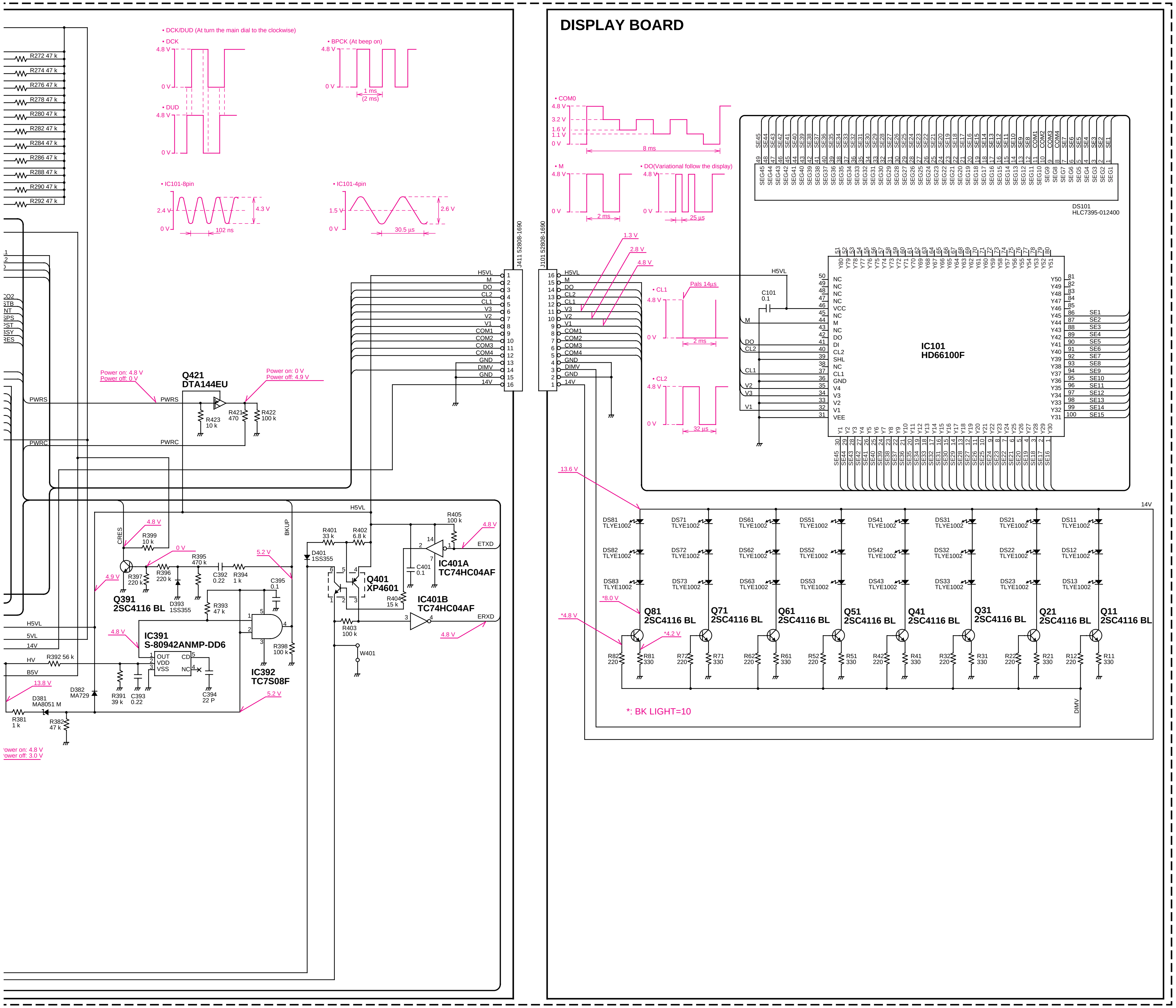
SECTION 9 BLOCK DIAGRAM



SECTION 10 VOLTAGE DIAGRAM

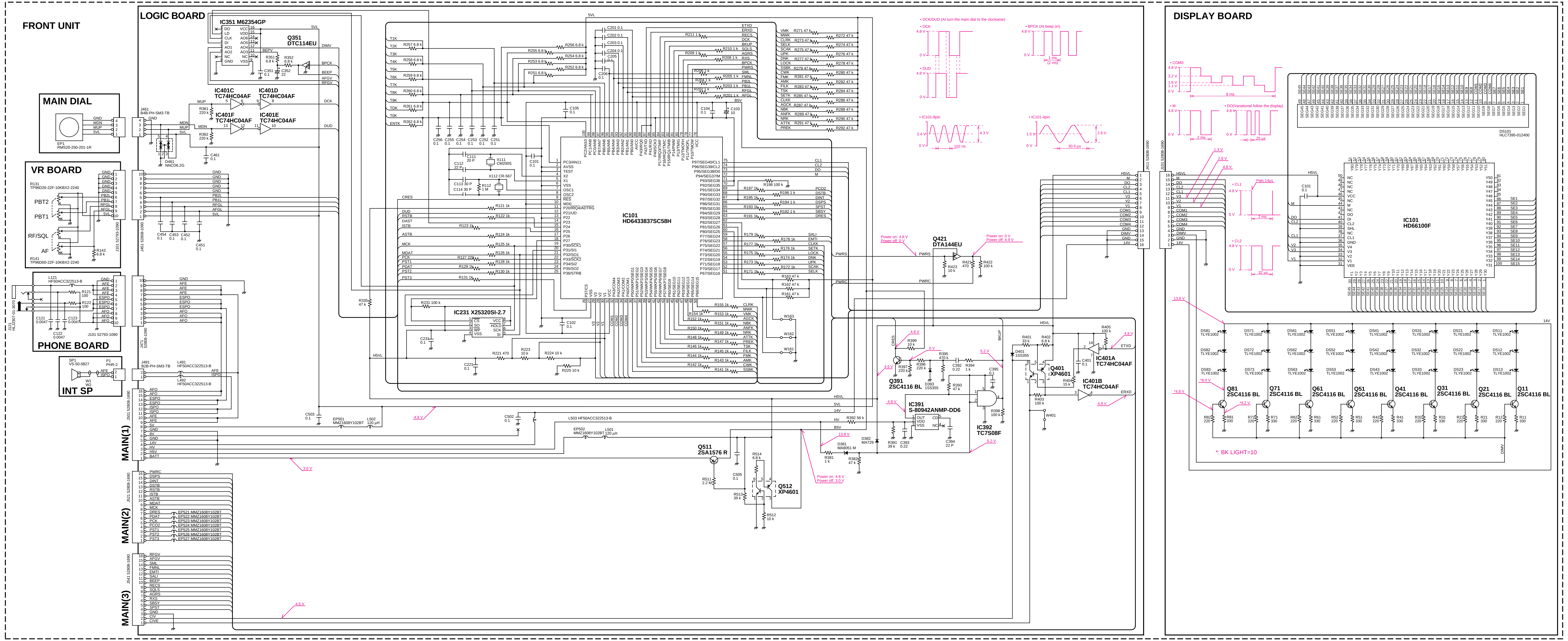
10-1 FRONT UNIT



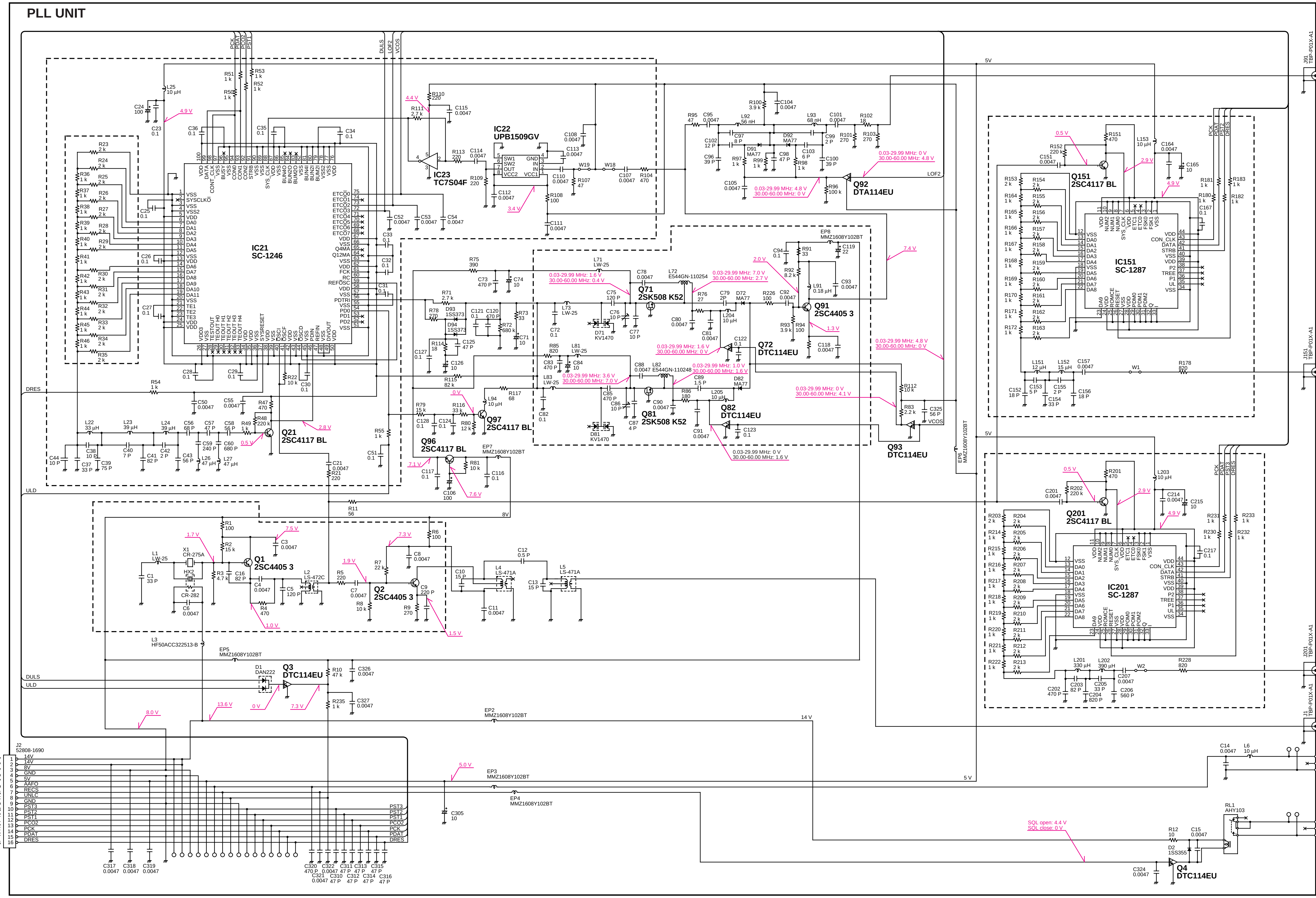


COMPLETE VIEW

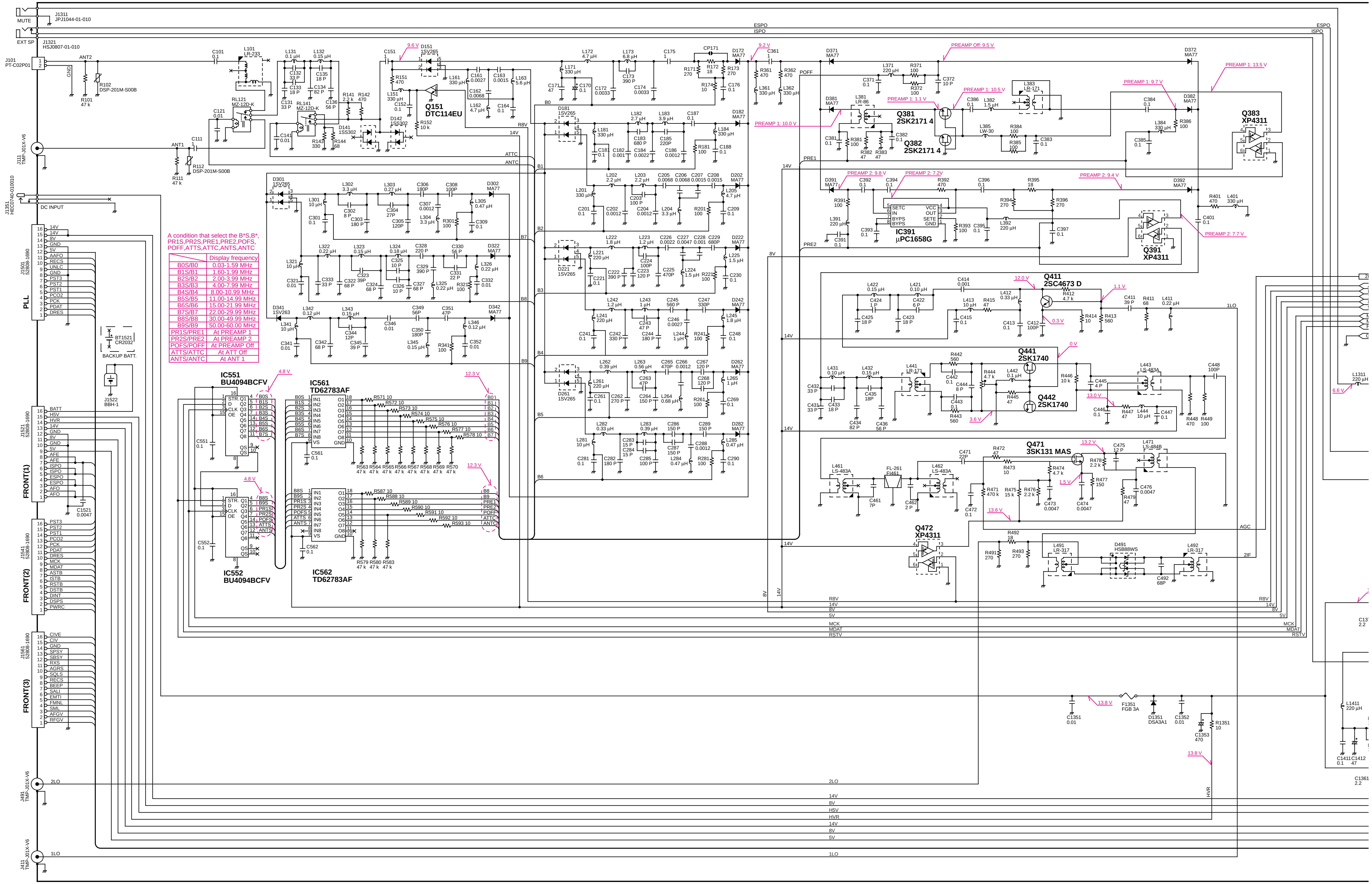
10-1 FRONT UNIT



10-2 PLL UNIT


PLL UNIT
IC21
SC-1246
IC22
UPB1509GV
IC23
TC7S04F
IC151
SC-1287
IC201
SC-1287
Q1
2SC4405 3
Q2
2SC4405 3
Q3
DTC114EU
Q4
DTC114EU
Q21
2SC4117 BL
Q71
2SK508 K52
Q72
DTC114EU
Q81
2SK508 K52
Q82
DTC114EU
Q91
2SC4405 3
Q92
DTA114EU
Q93
DTC114EU
Q96
2SC4117 BL
Q97
2SC4117 BL
Q151
2SC4117 BL
Q201
2SC4117 BL
J91
TBP-P01X-A1
P91
TMP-P01X-A1
1LO
J151
TBP-P01X-A1
P151
TMP-P01X-A1
3LO
J201
TBP-P01X-A1
P201
TMP-P01X-A1
BFO
J1
TBP-P01X-A1
P1
TMP-P01X-A1
2LO
J3
HSJ0807-01-010
REC OUT
J4
HSJ0807-01-010
REC REMOTE
RL1
AHY103
J2
52808-1690
MAIN
14V
14V
8V
GND
5V
AAFO
RECS
UNLC
GND
PST3
PST2
PST1
PCO2
PCK
PDAT
DRES
SQL open: 4.4 V
SQL close: 0 V

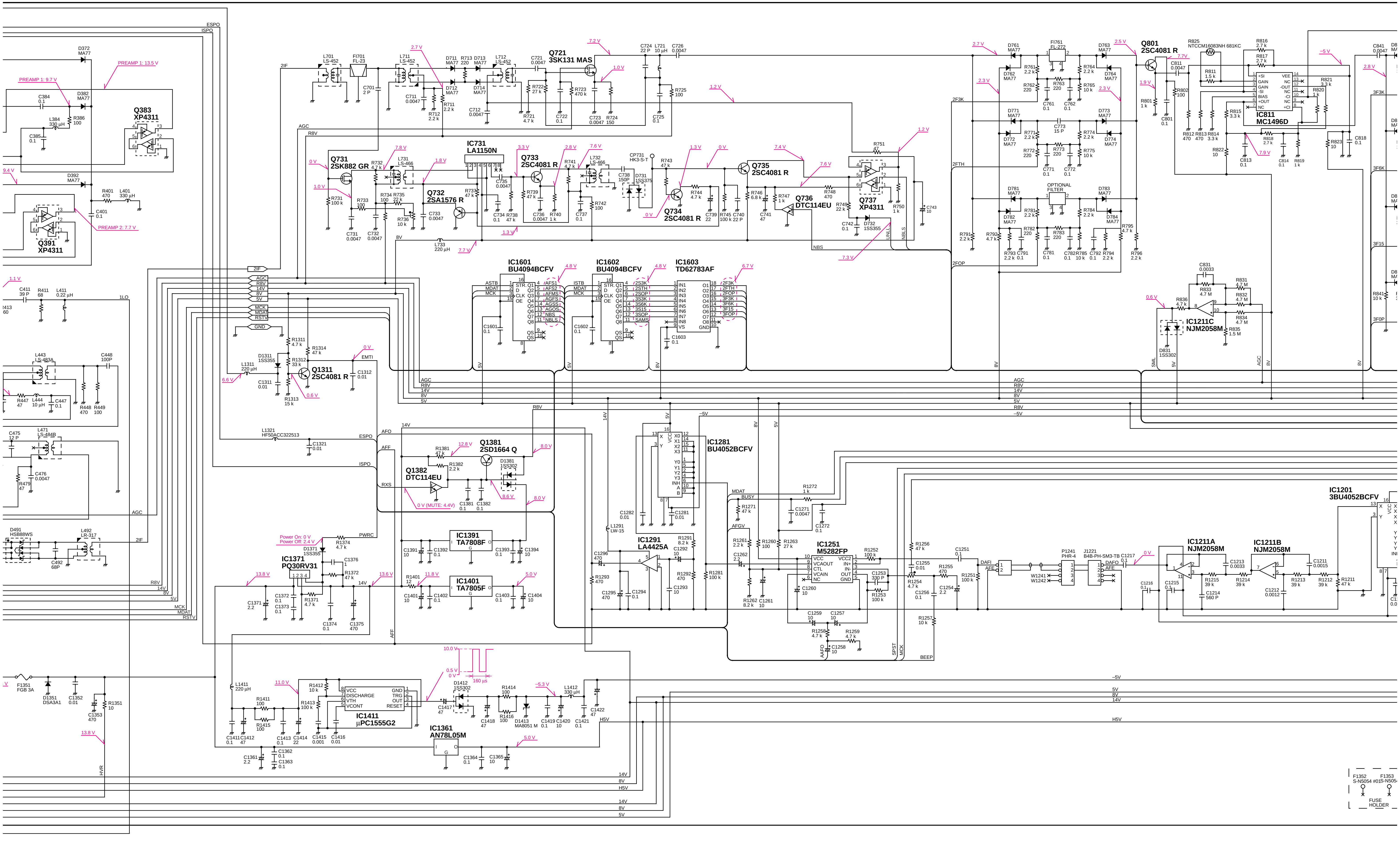
10-3 MAIN UNIT



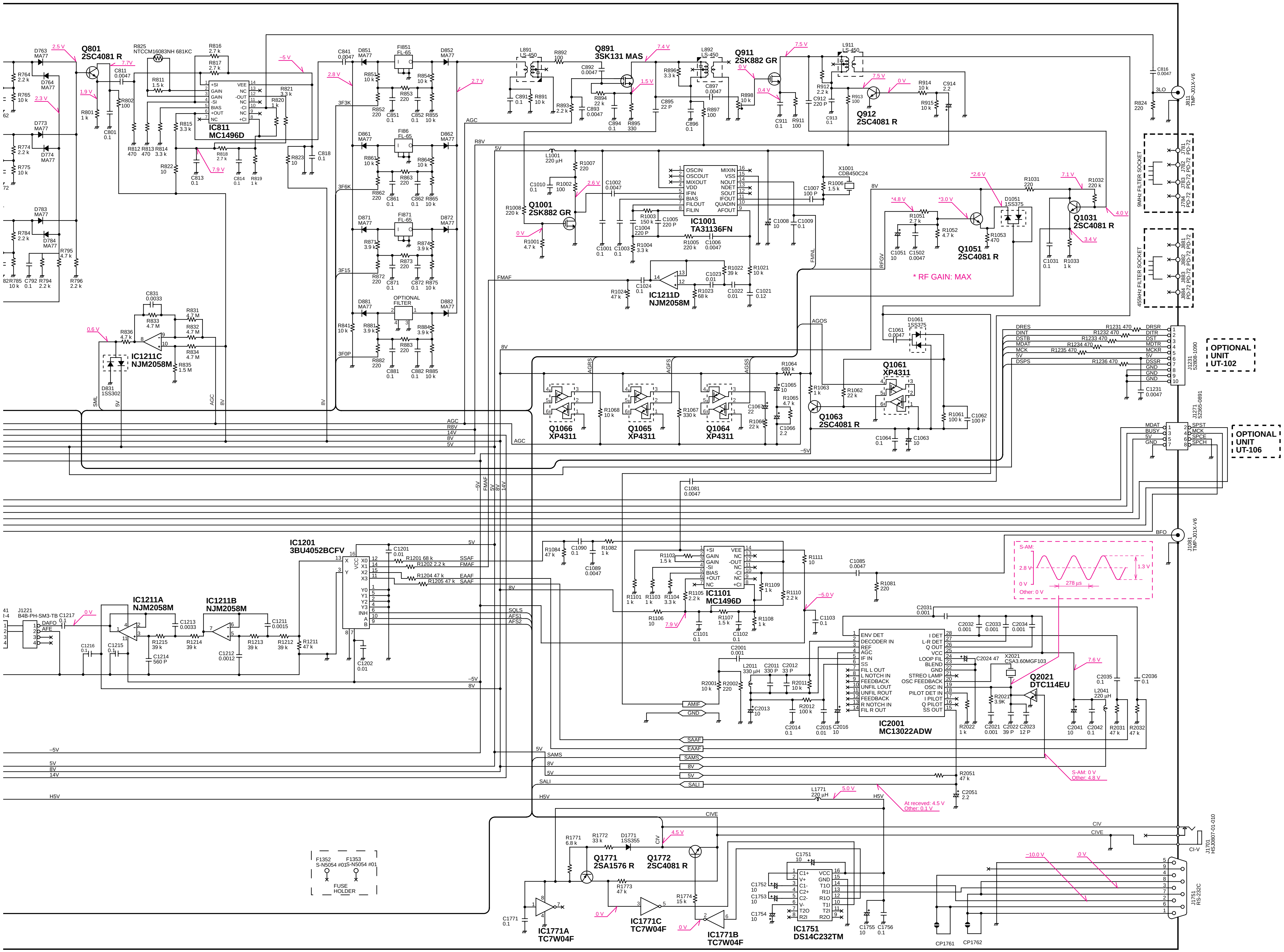
A condition that select the B*S,B*, PR1S,PR2S,PRE1,PRE2,POFS, POFF,ATTS,ATTC,ANTS,ANTC

	Display frequency
B0S/B0	0.03-1.59 MHz
B1S/B1	1.60-1.99 MHz
B2S/B2	2.00-3.99 MHz
B3S/B3	4.00-7.99 MHz
B4S/B4	8.00-10.99 MHz
B5S/B5	11.00-14.99 MHz
B6S/B6	15.00-21.99 MHz
B7S/B7	22.00-29.99 MHz
B8S/B8	30.00-49.99 MHz
B9S/B9	50.00-60.00 MHz
PR1S/PRE1	At PREAMP 1
PR2S/PRE2	At PREAMP 2
POFS/POFF	At PREAMP Off
ATTS/ATTC	At ATT Off
ANTS/ANTC	At ANT 1

COMPLETE VIEW


COMPLETE VIEW



COMPLETE VIEW

10-3 MAIN UNIT



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URL : http://www.icom-france.com

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A-5580I-S